

Lys Ser Arg Arg Glu Ala Val Ser Phe Leu Lys Glu Val Pro Pro Pro		
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Phe Thr Leu Val Cys Cys Arg Arg Leu Phe Asp Asp Glu Ala Ser Val		
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Asp Glu Pro Arg Arg Thr Glu Thr Ser Leu Pro Glu Thr Glu Val Asp		
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His Asn Met Asp Val Asn Thr Glu Glu Asp Asp Asp Gly Glu Leu Ala		
665 670 675		
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Gly Leu Gly Phe Ser Ile Leu Asp Tyr Gln Asp Pro Leu Asp Pro Thr		
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Arg Ser Val Ile Val Ile Arg Ser Leu Val Ala Asp Gly Val Ala Glu		
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Tyr Arg Leu Asp Asn Thr Ser Leu Ala Glu Ala Val Glu Ile Leu Lys		
745 750 755		
gct gtg cca cca ggc cta gta cac ctt ggc atc tgt aag cct ttg gtg	2476	
Ala Val Pro Pro Gly Leu Val His Leu Gly Ile Cys Lys Pro Leu Val		
760 765 770		
gaa gat aat gaa gaa gaa agt tgt tat att tta cat tca agc agt aat	2524	
Glu Asp Asn Glu Glu Ser Cys Tyr Ile Leu His Ser Ser Ser Asn		
775 780 785 790		
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Glu Asp Lys Thr Glu Phe Ser Gly Thr Ile His Asp Ile Asn Ser Ser		
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Leu Ile Leu Glu Ala Pro Lys Gly Phe Arg Asp Glu Pro Tyr Phe Lys		
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gaa gaa ctt gtg gat gaa cca ttt cta gat ctg gga aag tct ttc cat	2668	
Glu Glu Leu Val Asp Glu Pro Phe Leu Asp Leu Gly Lys Ser Phe His		
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tcc caa caa aaa gag ata gag caa agc aag gag gcc tgg gag atg cat	2716	
Ser Gln Gln Lys Glu Ile Glu Gln Ser Lys Glu Ala Trp Glu Met His		
840 845 850		
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Glu Phe Leu Thr Pro Arg Leu Gln Glu Met Asp Glu Glu Arg Glu Met		
855 860 865 870		
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Leu Val Asp Glu Glu Tyr Glu Leu Tyr Gln Asp Pro Ser Pro Ser Met			
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Glu Leu Tyr Pro Leu Ser His Ile Gln Glu Ala Thr Pro Val Pro Ser			
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Val Asn Glu Leu His Phe Gly Thr Gln Trp Leu His Asp Asn Glu Pro			
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Ser Glu Ser Gln Glu Ala Arg Thr Gly Arg Thr Val Tyr Ser Gln Glu			
920	925	930	
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Ala Gln Pro Tyr Gly Tyr Cys Pro Glu Asn Val Met Lys Glu Asn Phe			
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Val Met Glu Ser Leu Pro Ser Val Pro Ser Thr Glu Gly Asn Ser Gln			
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Gln Gly Arg Phe Asp Asp Leu Glu Asn Leu Asn Ser Leu Ala Lys Thr			
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Ser Leu Asp Leu Gly Met Ile Pro Asn Asp Val Gln Gly Pro Ser Leu			
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Leu Ile Asp Leu Pro Val Val Ala Gln Arg Arg Glu Gln Glu Asp Leu			
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Pro Leu Tyr Gln His Gln Ala Thr Arg Val Ile Ser Lys Ala Ser Ala			
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tac aca gga atg ttg tct aga tat gcc act gat aca tgt gag tta			3292
Tyr Thr Gly Met Leu Ser Ser Arg Tyr Ala Thr Asp Thr Cys Glu Leu			
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cct gag aga gaa gaa ggc gaa gga gaa act cca aat ttt agc cac			3340
Pro Glu Arg Glu Glu Gly Glu Glu Thr Pro Asn Phe Ser His			
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Trp Gly Pro Pro Arg Ile Val Glu Ile Phe Arg Glu Pro Asn Val Ser			
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Asn Gly Glu Glu Leu Lys Gly Ile Phe Ile Lys Gln Val Leu Glu Asp			
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agt cca gca ggg aag acg aac gca ctt aaa act gga gat aaa ata ctt			3532
Ser Pro Ala Gly Lys Thr Asn Ala Leu Lys Thr Gly Asp Lys Ile Leu			
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Leu Ser Ser Thr Pro Arg Val Ile Pro Asn Val His Asn Lys Ala Asn		
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Lys Ile Thr Gly Asn Gln Asn Gln Asp Thr Gln Glu Lys Lys Glu Lys		
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Ile Ile Glu Leu Glu Lys Asp Lys Asn Gly Leu Gly Leu Ser Leu Ala		
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Pro Glu Gly Pro Ala Ala Asp Gly Arg Met Arg Ile Gly Asp Glu		
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Ile Arg Asn Glu Asp Ala Val Asn Gln Met Ala Val Thr Pro Phe Pro		
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Val Pro Ser Ser Ser Pro Ser Ser Ile Glu Asp Gln Ser Gly Thr Glu		
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Pro Ile Ser Ser Glu Glu Asp Gly Ser Leu Glu Val Gly Ile Lys Gln		
1355	1360	1365
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Leu Pro Glu Ser Glu Ser Phe Lys Leu Ala Val Ser Gln Met Lys Gln		
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 1495 1500 1505 1510

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 Lys Val Arg Leu Val Val Tyr Arg Asp Glu Ala His Tyr Arg Asp Glu  
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gag aac ttg gag att ttc cct gtg gat ctg cag aag aaa gct ggc cgg 4780  
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tcagagacta ttacagacga ttgctgtact cgaggctcag cgttctcaag cagtccaaga 180  
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aaaactccag aagaaggctg atattggcgt tccatatcca cagagagttt tcataattgcc	300
ttagatcgta tggaccaat ataccatag cttggaaat ttgaaagag aataaaaaa	360
tcgtaaaaga catactagaa gagttaagct agttttgat aaagttagtt tacctgctag	420
accaaaaagt ctttagatc ctaagaagga tggagagtcc cttcatatt ct atg Met 1	475
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cat gaa ccg cca gtg tat atg gat gaa gat gat gac cga tct tgt ttt His Glu Pro Pro Val Tyr Met Asp Glu Asp Asp Arg Ser Cys Phe 130 135 140 145	907
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Ser Leu Asp Phe Cys Asp Ser Cys Ser Asp Cys Leu His Glu Thr Asp				
230	235	240		
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Ile His Lys Glu Asp His Gln Leu Glu Pro Ile Tyr Arg Ser Glu Thr				
245	250	255		
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Phe Leu Asp Arg Asp Tyr Cys Val Ser Gln Gly Thr Ser Tyr Asn Tyr				
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275	280			
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<221> CDS  
<222> (13)...(1413)

<p>&lt;400&gt; 474</p> <p>cattgaaaagt cg      atg gca tcg cac gag acc atg gcg gct ggg acc ctg  Met Ala Ser His Glu Thr Met Ala Ala Gly Thr Leu  1                        5                        10</p> <p>tac acg tat cct gaa aac tgg agg gcc ttc aag gct ctc atc gct gct  Tyr Thr Tyr Pro Glu Asn Trp Arg Ala Phe Lys Ala Leu Ile Ala Ala  15                        20                        25</p> <p>cag tac agc ggg gct cat gtc cgc gtg ctc tcc gca cca ccc cac ttc  Gln Tyr Ser Gly Ala His Val Arg Val Leu Ser Ala Pro Pro His Phe  30                        35                        40</p> <p>cat ttt ggc caa acc aac cgc acc cct gaa ttt ctc cgc aaa ttt cct  His Phe Gly Gln Thr Asn Arg Thr Pro Glu Phe Leu Arg Lys Phe Pro  45                        50                        55                        60</p> <p>gcc ggc aag gtc cca gca ttt gag ggt gat gat gga ttc tgt gtg ttt  Ala Gly Lys Val Pro Ala Phe Glu Gly Asp Asp Gly Phe Cys Val Phe  65                        70                        75</p> <p>gag agc aac gcc att gcc tac tat gtg agc aat gag gag ctg cgg gga  Glu Ser Asn Ala Ile Ala Tyr Tyr Val Ser Asn Glu Glu Leu Arg Gly  80                        85                        90</p> <p>agt act cca gag gca gca gcc cag gtg gtg cag tgg gtg agc ttt gct  Ser Thr Pro Glu Ala Ala Gln Val Val Gln Trp Val Ser Phe Ala  95                        100                        105</p> <p>gat tcc gat ata gtg ccc cca gcc agt acc tgg gtg ttc ccc acc ttg  Asp Ser Asp Ile Val Pro Pro Ala Ser Thr Trp Val Phe Pro Thr Leu  110                        115                        120</p> <p>ggc atc atg cac cac aac aaa cag gcc act gag aat gca aag gag gaa  Gly Ile Met His His Asn Lys Gln Ala Thr Glu Asn Ala Lys Glu Glu  125                        130                        135                        140</p> <p>gtg agg cga att ctg ggg ctg ctg gat gct tac ttg aag acg agg act  Val Arg Arg Ile Leu Gly Leu Leu Asp Ala Tyr Leu Lys Thr Arg Thr  145                        150                        155</p> <p>ttt ctg gtg ggc gaa cga gtg aca ttg gct gac atc aca gtt gtc tgc  Phe Leu Val Gly Glu Arg Val Thr Leu Ala Asp Ile Thr Val Val Cys  160                        165                        170</p> <p>acc ctg ttg tgg ctc tat aag cag gtt cta gag cct tct ttc cgc cag  Thr Leu Leu Trp Leu Tyr Lys Gln Val Leu Glu Pro Ser Phe Arg Gln  175                        180                        185</p> <p>gcc ttt ccc aat acc aac cgc tgg ttc ctc acc tgc att aac cag ccc  Ala Phe Pro Asn Thr Asn Arg Trp Phe Leu Thr Cys Ile Asn Gln Pro  190                        195                        200</p> <p>cag ttc cgg gct gtc ttg ggc gaa gtg aaa ctg tgt gag aag atg gcc</p>	<p>48</p> <p>96</p> <p>144</p> <p>192</p> <p>240</p> <p>288</p> <p>336</p> <p>384</p> <p>432</p> <p>480</p> <p>528</p> <p>576</p> <p>624</p> <p>672</p>
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Gln Phe Arg Ala Val Leu Gly Glu Val Lys Leu Cys Glu Lys Met Ala			
205	210	215	220
cag ttt gat gct aaa aag ttt gca gag acc caa cct aaa aag gac aca			720
Gln Phe Asp Ala Lys Lys Phe Ala Glu Thr Gln Pro Lys Lys Asp Thr			
225	230	235	
cca cgg aaa gag aag ggt tca cgg gaa gag aag cag aag ccc cag gct			768
Pro Arg Lys Glu Lys Gly Ser Arg Glu Glu Lys Gln Lys Pro Gln Ala			
240	245	250	
gag cgg aag gag gag aaa aag gcg gct gcc cct gct cct gag gag gag			816
Glu Arg Lys Glu Glu Lys Lys Ala Ala Ala Pro Ala Pro Glu Glu Glu			
255	260	265	
atg gat gaa tgt gag cag gcg ctg gct gct gag ccc aag gcc aag gac			864
Met Asp Glu Cys Glu Gln Ala Leu Ala Ala Glu Pro Lys Ala Lys Asp			
270	275	280	
ccc ttc gct cac ctg ccc aag agt acc ttt gtg ttg gat gaa ttt aag			912
Pro Phe Ala His Leu Pro Lys Ser Thr Phe Val Leu Asp Glu Phe Lys			
285	290	295	300
cgc aag tac tcc aat gag gac aca ctc tct gtg gca ctg cca tat ttc			960
Arg Lys Tyr Ser Asn Glu Asp Thr Leu Ser Val Ala Leu Pro Tyr Phe			
305	310	315	
tgg gag cac ttt gat aag gac ggc tgg tcc ctg tgg tac tca gag tat			1008
Trp Glu His Phe Asp Lys Asp Gly Trp Ser Leu Trp Tyr Ser Glu Tyr			
320	325	330	
cgc ttc cct gaa gaa ctc act cag acc ttc atg agc tgc aat ctc atc			1056
Arg Phe Pro Glu Glu Leu Thr Gln Thr Phe Met Ser Cys Asn Leu Ile			
335	340	345	
act gga atg ttc cag cga ctg gac aag ctg agg aag aat gcc ttc gcc			1104
Thr Gly Met Phe Gln Arg Leu Asp Lys Leu Arg Lys Asn Ala Phe Ala			
350	355	360	
agt gtc atc ctt ttt gga acc aac aat agc agc tcc att tct gga gtc			1152
Ser Val Ile Leu Phe Gly Thr Asn Asn Ser Ser Ser Ile Ser Gly Val			
365	370	375	380
tgg gtc ttc cga ggc cag gag ctt gcc ttt ccg ctg agt cca gat tgg			1200
Trp Val Phe Arg Gly Gln Glu Leu Ala Phe Pro Leu Ser Pro Asp Trp			
385	390	395	
cag gtg gac tac gag tca tac aca tgg cgg aaa ctg gat cct ggc agc			1248
Gln Val Asp Tyr Glu Ser Tyr Thr Trp Arg Lys Leu Asp Pro Gly Ser			
400	405	410	
gag gag acc cag acg ctg gtt cga gag tac ttt tcc tgg gag ggg gcc			1296
Glu Glu Thr Gln Thr Leu Val Arg Glu Tyr Phe Ser Trp Glu Gly Ala			
415	420	425	
ttc cag cat gtg gca aag cct tca atc agg gca aga tct tca agt gaa			1344
Phe Gln His Val Ala Lys Pro Ser Ile Arg Ala Arg Ser Ser Glu			
430	435	440	
cat ctc ttg cca tca cct agc tgc ctg cac ctg ccc ttc agg gag atg			1392
His Leu Leu Pro Ser Pro Ser Cys Leu His Leu Pro Phe Arg Glu Met			
445	450	455	460
ggg gtc att aaa gga aac tga acattgaaaa aaaaaaaaaa			1432

Gly Val Ile Lys Gly Asn \*  
465

<210> 475  
<211> 846  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (250)..(624)

<220>  
<221> misc\_feature  
<222> (1)...(846)  
<223> n = a,t,c or g

<400> 475

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ctcacgtgct gactgaaggt ttttgccgt ggctcaacag cttdcgaggc acatcttcag	120
taggataata tcttaggcatt ttgcgaagtt taaccacccg ggtaccggcg ttcttgcac	180
caccaactgg tttttaaca gttgcgagaa ccttctcctl cttttcttt ccaacttggg	240
cgctgcaga atg gct ccc gca aag aag ggt ggc gag aag aaa aag ggc	288
Met Ala Pro Ala Lys Lys Gly Gly Glu Lys Lys Gly	
1 5 10	
cgt tct gcc atc aac gaa gtg gta acc cga gaa tac acc atc aac att	336
Arg Ser Ala Ile Asn Glu Val Val Thr Arg Glu Tyr Thr Ile Asn Ile	
15 20 25	
cac aag cgc atc cat gga gtg ggc ttc aag aag cgt gca cct cgg gca	384
His Lys Arg Ile His Gly Val Gly Phe Lys Lys Arg Ala Pro Arg Ala	
30 35 40 45	
ctc aaa gag att cgg aaa ttt gcc atg aag gag atg gga act cca gat	432
Leu Lys Glu Ile Arg Lys Phe Ala Met Lys Glu Met Gly Thr Pro Asp	
50 55 60	
gtg cgc att gac acc agg ctc aac aaa gct gtc tgg gcc aaa gga ata	480
Val Arg Ile Asp Thr Arg Leu Asn Lys Ala Val Trp Ala Lys Gly Ile	
65 70 75	
agg aat gtg cca tac cga atc cgt gtg cgg ctg tcc aga aaa cgt aat	528
Arg Asn Val Pro Tyr Arg Ile Arg Val Arg Leu Ser Arg Lys Arg Asn	
80 85 90	
gag gat gaa gat tca cca aat aag cta tat act ttg gtt acc tat gta	576
Glu Asp Glu Asp Ser Pro Asn Lys Leu Tyr Thr Leu Val Thr Tyr Val	
95 100 105	
cct gtt acc act ttc aaa aat cta cag aca gtc aat gtg gat gag aac	624
Pro Val Thr Thr Phe Lys Asn Leu Gln Thr Val Asn Val Asp Glu Asn	
110 115 120 125	
taatcgctga tcgtcagatc aaataaagtt ataaaattgc cttcatgttt ttgttcttt	684

tagttgcaac ataatgtact tgtataccct atcctaatta tgggatcatt tgaagagctt 744  
ttccccaaatt gatggcctgt gctgccttct tcccatnccc tgggtttaa agtgattcna 804  
actgcancta gttttagaac cactgttctg ggttagtnggg ga 846

<210> 476  
<211> 2289  
<212> DNA  
<213> *Homo sapiens*

<220>  
<221> CDS  
<222> (31)..(1938)

<400> 476

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Met Pro Leu Pro Leu Leu Pro  
1 5

atg gac ctg aag gga gag ccc ggc ccc cct ggg aag ccc ggg ccc tgg 99  
 Met Asp Leu Lys Gly Glu Pro Gly Pro Pro Gly Lys Pro Gly Pro Trp  
           10                 15                 20

ggc ccc cct ggc ccc cct ggc ttc cca gga aaa cca ggc cat gga aag 147  
Gly Pro Pro Gly Pro Pro Gly Phe Pro Gly Lys Pro Gly His Gly Lys  
25 30 35

cca gga ctc cat ggg cag cct ggc cct gct ggg ccc cct ggc ttc tcc 195  
 Pro Gly Leu His Gly Gln Pro Gly Pro Ala Gly Pro Pro Gly Phe Ser  
 40 45 50 55

cgg atg ggc aag gct ggt ccc cca ggg ctc cct ggc aac gtc ggg cca 243  
 Arg Met Gly Lys Ala Gly Pro Pro Gly Leu Pro Gly Asn Val Gly Pro  
               60              65              70

cca ggg cag ccg ggg ctt cg<sup>75</sup> gag cca gga ata cg<sup>80</sup>a ggg gac cag  
 Pro Gly Gln Pro Gly Leu Arg Gly Glu Pro Gly Ile Arg Gly Asp Gln  
291  
85

ggc ctc cgg gga ccc cca gga ccc cct ggc ctc ccg ggc ccc tca ggc 339  
 Gly Leu Arg Gly Pro Pro Gly Pro Pro Gly Leu Pro Gly Pro Ser Gly  
 90 95 100

att act atc cct gga aaa cca ggt gcc caa ggg gtg cca ggg ccc cca 387  
 Ile Thr Ile Pro Gly Lys Pro Gly Ala Gln Gly Val Pro Gly Pro Pro  
 105 110 115

gga ttc cag ggg gaa cca ggg ccc cag ggg gag cct ggg ccc cca ggt 435  
 Gly Phe Gln Gly Glu Pro Gly Pro Gln Gly Glu Pro Gly Pro Pro Gly  
 120 125 130 135

gat cga ggc ctc aag ggg gat aat gga gtg ggc cag ccc ggg ctg cct 483  
Asp Arg Gly Leu Lys Gly Asp Asn Gly Val Gly Gln Pro Gly Leu Pro  
140 145 150

ggg gcc cca ggg cag ggg ggt gcc ccc ggc ccc ccc ggc ctc cct ggt 531  
Gly Ala Pro Gly Gln Gly Ala Pro Gly Pro Pro Gly Leu Pro Gly  
155 160 165

cca gct ggc tta ggc aaa cct ggt ttg gat ggg ctt cct ggg gcc cca 579

Pro Ala Gly Leu Gly Lys Pro Gly Leu Asp Gly Leu Pro Gly Ala Pro  
 170 175 180  
 gga gac aag ggt gag tct ggg cct cct gga gtt cca ggc ccc agg ggg 627  
 Gly Asp Lys Gly Glu Ser Gly Pro Pro Gly Val Pro Gly Pro Arg Gly  
 185 190 195  
 gag cca gga gct gtg ggc cca aaa gga cct cct gga gta gac ggt gtg  
 Glu Pro Gly Ala Val Gly Pro Lys Gly Pro Pro Gly Val Asp Gly Val  
 200 205 210 215  
 gga gtc cca ggg gca gca ggg ttg cca gga cca cag ggc cca tca ggg 723  
 Gly Val Pro Gly Ala Ala Gly Leu Pro Gly Pro Gln Gly Pro Ser Gly  
 220 225 230  
 gcc aaa ggg gag cca gga acc cgg ggc ccc cct ggg ctg ata ggc ccc  
 Ala Lys Gly Glu Pro Gly Thr Arg Gly Pro Pro Gly Leu Ile Gly Pro  
 235 240 245  
 act ggc tat ggg atg cca gga ctg cca ggc ccc aag ggg gac agg ggc 819  
 Thr Gly Tyr Gly Met Pro Gly Leu Pro Gly Pro Lys Gly Asp Arg Gly  
 250 255 260  
 cca gct ggg gtc cca gga ctc ttg ggg gac agg ggt gag cca ggg gag 867  
 Pro Ala Gly Val Pro Gly Leu Leu Gly Asp Arg Gly Glu Pro Gly Glu  
 265 270 275  
 gat ggg gag cca ggg gag cag ggc cca cag ggt ctt ggg ggt ccc cct 915  
 Asp Gly Glu Pro Gly Glu Gln Gly Pro Gln Gly Leu Gly Gly Pro Pro  
 280 285 290 295  
 ggg ctt cct ggg tct gca ggg ctt cct ggc aga cgt ggg ccc cct ggg 963  
 Gly Leu Pro Gly Ser Ala Gly Leu Pro Gly Arg Arg Gly Pro Pro Gly  
 300 305 310  
 cct aag ggt gag gca ggg cct gga gga ccc cca gga gtg cct ggc att 1011  
 Pro Lys Gly Glu Ala Gly Pro Gly Gly Pro Pro Gly Val Pro Gly Ile  
 315 320 325  
 cga ggt gac cag ggg cct agt ggg ctg gct ggg aaa cca ggg gtc cca 1059  
 Arg Gly Asp Gln Gly Pro Ser Gly Leu Ala Gly Lys Pro Gly Val Pro  
 330 335 340  
 ggt gag agg gga ctt cct ggg gcc cat gga ccc cct gga cca act ggg 1107  
 Gly Glu Arg Gly Leu Pro Gly Ala His Gly Pro Pro Gly Pro Thr Gly  
 345 350 355  
 ccc aag ggt gag ccg ggt ttc acg ggt cgc cct gga gga cca ggg gtg 1155  
 Pro Lys Gly Glu Pro Gly Phe Thr Gly Arg Pro Gly Gly Pro Gly Val  
 360 365 370 375  
 gca gga gcc ctg ggg cag aaa ggt gac ttg ggg ctc cct ggg cag cct 1203  
 Ala Gly Ala Leu Gly Gln Lys Gly Asp Leu Gly Leu Pro Gly Gln Pro  
 380 385 390  
 ggc ctg agg ggt ccc tca gga atc cca gga ctc cag ggt cca gct ggc 1251  
 Gly Leu Arg Gly Pro Ser Gly Ile Pro Gly Leu Gln Gly Pro Ala Gly  
 395 400 405  
 cct att ggc ccc caa ggc ctg ccc ggc ctg aag ggg gaa cca ggc ctg 1299  
 Pro Ile Gly Pro Gln Gly Leu Pro Gly Leu Lys Gly Glu Pro Gly Leu  
 410 415 420  
 cca ggg ccc cct gga gag ggg aga gca ggg gaa cct ggc acg gct ggc 1347

Pro Gly Pro Pro Gly Glu Gly Arg Ala Gly Glu Pro Gly Thr Ala Gly			
425	430	435	
cca cgg ggg ccc cca ggg gtc cct ggc tcc cct gga atc acg ggg cct		1395	
Pro Arg Gly Pro Pro Gly Val Pro Gly Ser Pro Gly Ile Thr Gly Pro			
440	445	450	455
ccg ggg ctc ccg gga ccc cct ggt gcc cct ggg gcc ttc gat gag act		1443	
Pro Gly Leu Pro Gly Pro Pro Gly Ala Pro Gly Ala Phe Asp Glu Thr			
460	465	470	
ggc atc gca ggc ttg cac ctg ccc aac ggc ggt gtg gag ggt gcc gtg		1491	
Gly Ile Ala Gly Leu His Leu Pro Asn Gly Gly Val Glu Gly Ala Val			
475	480	485	
ctg ggc aag ggg ggc aag cca cag ttt ggg ctg ggc gag ctg tct gcc		1539	
Leu Gly Lys Gly Lys Pro Gln Phe Gly Leu Gly Glu Leu Ser Ala			
490	495	500	
cat gcc aca ccg gcc ttc act gcg gtg ctc acc tcg ccc tta ccc gcc		1587	
His Ala Thr Pro Ala Phe Thr Ala Val Leu Thr Ser Pro Leu Pro Ala			
505	510	515	
tcg ggc atg ccc gtg aaa ttt gac cgg act ctc tac aat ggc cac agc		1635	
Ser Gly Met Pro Val Lys Phe Asp Arg Thr Leu Tyr Asn Gly His Ser			
520	525	530	535
ggc tac aac cca gcc act ggc atc ttc acc tgc cct gtg ggc ggc gtc		1683	
Gly Tyr Asn Pro Ala Thr Gly Ile Phe Thr Cys Pro Val Gly Gly Val			
540	545	550	
tac tac ttt gct tac cat gtg cac gtc aag ggc acc aac gtg tgg gtg		1731	
Tyr Tyr Phe Ala Tyr His Val His Val Lys Gly Thr Asn Val Trp Val			
555	560	565	
gcc ctg tac aag aac aac gtg cgc gcc acc tat acc tac gat gag tac		1779	
Ala Leu Tyr Lys Asn Asn Val Pro Ala Thr Tyr Thr Tyr Asp Glu Tyr			
570	575	580	
aag aag ggc tac ctg gac cag gca tct ggt ggg gcc gtg ctc cag ctg		1827	
Lys Lys Gly Tyr Leu Asp Gln Ala Ser Gly Gly Ala Val Leu Gln Leu			
585	590	595	
cgg ccc aac gac cag gtc tgg gtg cag atg cgc tcg gac cag gcc aac		1875	
Arg Pro Asn Asp Gln Val Trp Val Gln Met Pro Ser Asp Gln Ala Asn			
600	605	610	615
ggc ctc tac tcc acg gag tac atc cac tcc tcc ttt tca gga ttc ttg		1923	
Gly Leu Tyr Ser Thr Glu Tyr Ile His Ser Ser Phe Ser Gly Phe Leu			
620	625	630	
ctc tgc ccc aca taa cccgcgggg gtgtcctgct gccctggcct cctccccttt		1978	
Leu Cys Pro Thr *			
635			
agtggtagag cgacctttc aattacaaag aacctcctgg aaaaaaaaaac aaaagctgaa		2038	
cagaggcggc cgtggccttg gcccaggag actaacttgc tttctccctg catgcaggct		2098	
gagattgttt ctggaaagggg ctggcctgag tttctttccc ccaaatgtct gtgcagtgtc		2158	
agggctgcac cccataggcc ctgaggcaca cagcccagcc ccttgtgagt cctggcctct		2218	
gctggccct gaaggagctg agagggagct caactcccoa ccccgccacg tggggagacc		2278	

gcccttcccc c

2289

<210> 477  
 <211> 1134  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (353) .. (1075)

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 ggtgtgtggc ggccatccca tccctgtgtaa agacctgggg aaaccactct tcaaggttca 120  
 ggaggaggga gggcgcccccc cgacccttaa ccagagcgag gttgttgctt tgtgtccaca 180  
 gggaccagga gCGAACCATG atGCCAGGTA ggaggggctg actggggccct gCGAGCGCGT 240  
 gccttcctg ctgggcagag gCCCTCCACA tggggccacg cgggcccggc acaggaggc 300  
 agtcagatgg gcagggccctg agagcctccc tccttcctt aggtccctaa tc atg 355  
 Met  
 1

gac tcc cca aga gct ggc acc cac cag ggc ccc ctc gat gca gag aca 403  
 Asp Ser Pro Arg Ala Gly Thr His Gln Gly Pro Leu Asp Ala Glu Thr  
 5 10 15

gag gtc ggt gct gac cgc tgc acg tcg act gcc tac cag gag cag agg 451  
 Glu Val Gly Ala Asp Arg Cys Thr Ser Thr Ala Tyr Gln Glu Gln Arg  
 20 25 30

ccc cag gtg gag caa gtt ggc aaa cag gct cct ctc tcc cca ggg ctg 499  
 Pro Gln Val Glu Gln Val Gly Lys Gln Ala Pro Leu Ser Pro Gly Leu  
 35 40 45

ccg gca atg ggg ggg cct ggc ccc ggc ccc tgt gag gac ccc gcg ggt 547  
 Pro Ala Met Gly Gly Pro Gly Pro Gly Pro Cys Glu Asp Pro Ala Gly  
 50 55 60 65

gct ggg gga gca ggt gca ggg ggc tcc gag ccc ctg gtg act gtc acc 595  
 Ala Gly Gly Ala Gly Gly Ser Glu Pro Leu Val Thr Val Thr  
 70 75 80

gtg cag tgc gcc ttc aca gtg gcc ctg agg gca cga aga gga gcc gac 643  
 Val Gln Cys Ala Phe Thr Val Ala Leu Arg Ala Arg Arg Gly Ala Asp  
 85 90 95

ctg tcc agc ctg cgg gca ctg ctg ggc caa gcc ctc cct cac cag gcc 691  
 Leu Ser Ser Leu Arg Ala Leu Leu Gly Gln Ala Leu Pro His Gln Ala  
 100 105 110

cag ctt ggg caa ctc agt tac cta gcc cca ggt gag gac ggg cac tgg 739  
 Gln Leu Gly Gln Leu Ser Tyr Leu Ala Pro Gly Glu Asp Gly His Trp  
 115 120 125

gtc ccc atc ccc gag gag gag tcg ctg cag agg gcc tgg cag gac gca 787  
 Val Pro Ile Pro Glu Glu Ser Leu Gln Arg Ala Trp Gln Asp Ala

130	135	140	145	
				835
gct gcc tgc ccc agg ggg ctg cag ctg cag tgc agg gga gcc ggg ggt Ala Ala Cys Pro Arg Gly Leu Gln Leu Gln Cys Arg Gly Ala Gly Gly				
150		155		160
				883
cgg ccg gtc ctc tac cag gtg gtg gcc cag cac agc tac tcc gcc cag Arg Pro Val Leu Tyr Gln Val Val Ala Gln His Ser Tyr Ser Ala Gln				
165		170		175
				931
ggg cca gag gac ctg ggc ttc cga cag ggg gac acg gtg gac gtc ctg Gly Pro Glu Asp Leu Gly Phe Arg Gln Gly Asp Thr Val Asp Val Leu				
180		185		190
				979
tgt gaa gtg gac cag gca tgg ctg gag ggc cac tgt gac ggc cgc atc Cys Glu Val Asp Gln Ala Trp Leu Glu Gly His Cys Asp Gly Arg Ile				
195		200		205
				1027
ggc atc ttc ccc aag tgc ttc gtg gtc ccc gcc ggc cct cgg atg tca Gly Ile Phe Pro Lys Cys Phe Val Val Pro Ala Gly Pro Arg Met Ser				
210		215		220
				225
gga gcc ccc ggc cgc ctg ccc cga tcc cag cag gga gat cag ccc taa Gly Ala Pro Gly Arg Leu Pro Arg Ser Gln Gln Gly Asp Gln Pro *				
230		235		240
				1075
tgatgctgtg tccatgatgc ttttaataaa aacaacccccc actgcaaaaa aaaaaaaaaa				1134

<210> 478  
<211> 3175  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (694) .. (1779)

<400> 478 caggaaggc catgaagatt aataaagatt tggactcagg gcaaatat tt acttagtagc aataactcaa agaattactg ttgaataaaat aagccaatta agcagccaat cacgtactat gcggatgcac acaaataaaa ccctcacttc aacctgaaga cattcgacata tgagttacgt agagggacct gcaggaagcg gtagagaaaa cataaggctt atgcgtttaa tttccacacc aatttcagga tctttgtcac tgacagcagc actaagactt gttacttta tatagttaag aagaacaagg ctgagcgcga tgactcacgc ctgttaagcct agaactttgg gaggccaaag caggcagact gcttgagccc aggagttcca gaccagcctg ggcaacatgg caacacccca tctctacaaa aaaatacaag aatcagctgg gcgtggtgat gtgttcctgt aatctcagct actcgggagg cagaggcagg aggattgctt gaacccggga ggcagaggtt gtagttagcc gagatctcgc cactgcactc cagttctggac gacagagtga gactcagtct caaataaaata aataaataca taaatataag gaaaaaaaaa aagctgcttt ctctcttcc tccttttgg tctcatctgg ctctgctcca ggcacatctgcc aca atg tgg gtg ctt aca cct gct	60 120 180 240 300 360 420 480 540 600 660 714
--	---

Met Trp Val Leu Thr Pro Ala			
1	5		
gct ttt gct ggg aag ctc ttg agt gtg ttc agg caa cct ctg agc tct Ala Phe Ala Gly Lys Leu Leu Ser Val Phe Arg Gln Pro Leu Ser Ser	10	15	762
10	15	20	
ctg tgg agg agc ctg gtc ccg ctg ttc tgc tgg ctg agg gca acc ttc Leu Trp Arg Ser Leu Val Pro Leu Phe Cys Trp Leu Arg Ala Thr Phe	25	30	810
25	30	35	
tgg ctg cta gct acc aag agg aga aag cag cag ctg gtc ctg aga ggg Trp Leu Leu Ala Thr Lys Arg Arg Lys Gln Gln Leu Val Leu Arg Gly	40	45	858
40	45	50	55
cca gat gag acc aaa gag gag gaa gag gac cct cct ctg ccc acc acc Pro Asp Glu Thr Lys Glu Glu Glu Asp Pro Pro Leu Pro Thr Thr	60	65	906
60	65	70	
cca acc agc gtc aac tat cac ttc act cgc cag tgc aac tac aaa tgc Pro Thr Ser Val Asn Tyr His Phe Thr Arg Gln Cys Asn Tyr Lys Cys	75	80	954
75	80	85	
ggc ttc tgt ttc cac aca gcc aaa aca tcc ttt gtg ctg ccc ctt gag Gly Phe Cys Phe His Thr Ala Lys Thr Ser Phe Val Leu Pro Leu Glu	90	95	1002
90	95	100	
gaa gca aag aga gga ttg ctt ttg ctt aag gaa gct ggt atg gag aag Glu Ala Lys Arg Gly Leu Leu Leu Lys Glu Ala Gly Met Glu Lys	105	110	1050
105	110	115	
atc aac ttt tca ggt gga gag cca ttt ctt caa gac cgg gga gaa tac Ile Asn Phe Ser Gly Gly Glu Pro Phe Leu Gln Asp Arg Gly Glu Tyr	120	125	1098
120	125	130	135
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 Leu Pro Leu Ile Pro Ile Leu Ala Val Met Glu Ser His Ala Ile Gln  
 95 100 105 110  
 gtg aac aaa gag gag atg gag aag acg tca gca ctt ctt ggg gct cgt 444  
 Val Asn Lys Glu Glu Met Glu Lys Thr Ser Ala Leu Leu Gly Ala Arg  
 115 120 125  
 ctc aag gaa ttg gag caa gaa gct cat ttt gtt gca gga gaa cgg ttt 492  
 Leu Lys Glu Leu Glu Gln Glu Ala His Phe Val Ala Gly Glu Arg Phe  
 130 135 140  
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 Leu Ile Thr Ser Asn Asn Gln Leu Arg Glu Ile Leu Phe Gly Lys Leu  
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 Lys Leu His Leu Leu Ser Gln Arg Asn Ser Leu Pro Arg Thr Gly Leu  
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 175 180 185 190  
 ctt cat cca tta ccc aag ata att ttg gaa tac agg cag gtt cac aag 684  
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 Ile Lys Ser Thr Phe Val Asp Gly Leu Leu Ala Cys Met Lys Lys Gly  
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 Ser Ile Ser Ser Thr Trp Asn Gln Thr Gly Thr Val Thr Gly Arg Leu  
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275 280 285	
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335 340 345 350	
gtc tat gga gca ggg aag gag cgg ctg gct gct tgc ctt gga gtt cct Val Tyr Gly Ala Gly Lys Glu Arg Leu Ala Ala Cys Leu Gly Val Pro	1164
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435 440 445	
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cggctggagc acgtcctaca agttacggga gagtcggctg tgaaggagac gttcgcttat	240	
cccctgtgtc cccgctcctg gccccctccag acccccgct tgcctcgcgc tgggagggga	300	
gatccaga atg aaa ggc aag aaa ggt att gtt gca gca tct ggc agt gag	350	
Met Lys Gly Lys Lys Gly Ile Val Ala Ala Ser Gly Ser Glu		
1 5 10		

act gag gat gag gac agc atg gac att ccc ttg gac ctt tct tca tcc 398  
 Thr Glu Asp Glu Asp Ser Met Asp Ile Pro Leu Asp Leu Ser Ser Ser  
 15 . . . . . 20 . . . . . 25 . . . . . 30

gct ggc tca ggc aag aga agg aga agg ggc aac cta ccc aag gag tct      446  
 Ala Gly Ser Gly Lys Arg Arg Arg Arg Gly Asn Leu Pro Lys Glu Ser  
                   35                  40                  45

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 Val Gln Ile Leu Arg Asp Trp Leu Tyr Glu His Arg Tyr Asn Ala Tyr  
 50 55 60

cct tca gag caa gaa aaa gcg ttg ctg tcc cag caa aca cac ctg tct 542  
 Pro Ser Glu Gln Glu Lys Ala Leu Leu Ser Gln Gln Thr His Leu Ser  
           65                70                75

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aca gct taa cccattt tcaagcaaaa cagttctcag aaatgtcatg attgccgggg Thr Ala *	1174
 tgaaggcaag agatgaattt cattatttta tatatttttt attaatattt gcacatggaa  ttgctaaaac agcttcctgt tactgagatg tcttcaatgg aatacagtca ttccaagaac  tataaaactta aagctactgt agaaaacaaag ggttttcttt tttaaatgtt tcttggtaga  ttattcataa tgtgagatgg ttcccaatat catgtgattt ttttttccct ccccttccct  ttttttgtta ttttttcaga ctgtgcaata ctttagagaac ctatagcatc ttctcattcc  catgtggAAC aggatgcccA catactgtct aattaataaa ttttccattt tttttcaaAC	1234 1294 1354 1414 1474 1534

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1546

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 gggaggaact gggccattct aacacccgtt gctacc atg ctg gcc acc cgc ctc 414  
 Met Leu Ala Thr Arg Leu  
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tcc aga ccc ctg tca cgg ctc cca gga aaa acc cta agt gcc tgt gat 462  
 Ser Arg Pro Leu Ser Arg Leu Pro Gly Lys Thr Leu Ser Ala Cys Asp  
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aga gaa aat gga gca aga cgc cca cta ttg ctt ggt tct act tcc ttt 510  
 Arg Glu Asn Gly Ala Arg Arg Pro Leu Leu Leu Gly Ser Thr Ser Phe  
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atc ccg att ggc cgt cgg act tat gcc agt gcg gcg gag ccg gtt ggc 558  
 Ile Pro Ile Gly Arg Arg Thr Tyr Ala Ser Ala Ala Glu Pro Val Gly  
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agc aaa gct gtc ctg gtc aca ggc tgt gac tct gga ttt ggg ttc tca 606  
 Ser Lys Ala Val Leu Val Thr Gly Cys Asp Ser Gly Phe Gly Phe Ser  
 55 60 65 70

ttg gcc aag cat ctg cat tca aaa ggc ttc ctt gtg ttt gct ggc tgc 654  
 Leu Ala Lys His Leu His Ser Lys Gly Phe Leu Val Phe Ala Gly Cys  
 75 80 85

ttg atg aag gac aaa ggc cat gat ggg gtc aag gag ctg gac agc cta 702  
 Leu Met Lys Asp Lys Gly His Asp Gly Val Lys Glu Leu Asp Ser Leu  
 90 95 100

aac agt gac cga ttg aga acc gtc cag ctc aat gtc tgc agc agc gaa 750  
 Asn Ser Asp Arg Leu Arg Thr Val Gln Leu Asn Val Cys Ser Ser Glu  
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 Glu Val Glu Lys Val Val Glu Ile Val Arg Ser Ser Leu Lys Asp Pro  
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1759

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Gln Gln Glu Arg Arg Gln Gln Ser Ile Ser Glu Asn Glu Lys Leu			
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Gln Lys Leu Lys Glu Arg Val Ala Gln Glu Asn Lys Leu Lys Lys			
180	185	190	
att cgt gca atg aga gga caa gtc gac tac agc aaa atc atg aac ggc			864
Ile Arg Ala Met Arg Gly Gln Val Asp Tyr Ser Lys Ile Met Asn Gly			
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aat ctg tct gct gaa ata gaa agg ttc agt gcc atg ttc cag gaa aag			912
Asn Leu Ser Ala Glu Ile Glu Arg Phe Ser Ala Met Phe Gln Glu Lys			
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Lys Gln Glu Val Gln Thr Ala Ile Leu Arg Val Asp Gln Leu Ser Gln			
225	230	235	240
caa ttg gaa gat tta aag aaa gga aaa ctg aat ggg ttc cag tct tac			1008
Gln Leu Glu Asp Leu Lys Gly Lys Leu Asn Gly Phe Gln Ser Tyr			
245	250	255	
aat ggc aaa ttg acg gga cca gcg gcg gtg gag tta aaa aga ctg tac			1056
Asn Gly Lys Leu Thr Gly Pro Ala Ala Val Glu Leu Lys Arg Leu Tyr			
260	265	270	
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Gln Glu Leu Gln Ile Arg Asn Gln Leu Asn Gln Glu Gln Asn Ser Lys			
275	280	285	
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Leu Gln Gln Lys Glu Leu Leu Asn Lys Arg Asn Met Glu Val Ala			
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Met Met Asp Lys Arg Ile Ser Glu Leu Arg Glu Arg Leu Tyr Gly Lys			
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Lys Ile Gln Ala Cys Glu Lys Val Phe Leu Asn Arg Val Asn Gly Thr			
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Ser Ser Pro Gln Ser Pro Leu Ser Thr Ser Gly Arg Val Ala Ala Val			
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Gly Pro Tyr Ile Gln Val Pro Ser Ala Gly Ser Phe Pro Val Leu Gly			
355	360	365	
gac cct ata aag ccc cag tct ctc agt att gcc tca aat gct gct cat			1392
Asp Pro Ile Lys Pro Gln Ser Leu Ser Ile Ala Ser Asn Ala Ala His			
370	375	380	
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Gly Arg Ser Lys Ser Ala Asn Asp Gly Asn Trp Pro Thr Leu Lys Gln			
385	390	395	400
aat tct agc tct tcc gtg aaa cca gtg cag gtg gcc ggt gca gac tgg			1488
Asn Ser Ser Ser Val Lys Pro Val Gln Val Ala Gly Ala Asp Trp			
405	410	415	
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Lys Asp Pro Ser Val Glu Gly Ser Val Lys Gln Gly Thr Val Ser Ser		
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435	440	445
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450	455	460
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465	470	475
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485	490	495
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gcc aca cca cct aag aat tac cag ccg gca gca cac agc gcc tta aat Ala Thr Pro Pro Lys Asn Tyr Gln Pro Ala Ala His Ser Ala Leu Asn		
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625	630	635
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cag gat ggc ccc gcc gcc ccc gca gat ggc agc acc gtg gag agc ctg Gln Asp Gly Pro Ala Ala Pro Ala Asp Gly Ser Thr Val Glu Ser Leu		
660	665	670
cca cgg cca ctc agc ccc acc aag ctc acg ccc atc gtg cat tcg cca		
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Pro Arg Pro Leu Ser Pro Thr Lys Leu Thr Pro Ile Val His Ser Pro			
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Leu Arg Tyr Gln Ser Asp Ala Asp Leu Glu Ala Leu Arg Arg Lys Leu			
690	695	700	
gcc aac gcg ccc cgg ccc ctg aaa aag cgc agc tcc atc aca gag ccc		2400	
Ala Asn Ala Pro Arg Pro Leu Lys Lys Arg Ser Ser Ile Thr Glu Pro			
705	710	715	720
gag ggc ccc ggc ggg ccc aac atc cag aag ctg ctg tac cag cgc ttc		2448	
Glu Gly Pro Gly Pro Asn Ile Gln Lys Leu Leu Tyr Gln Arg Phe			
725	730	735	
aac acc ctg gcc ggt ggc atg gag ggc acc cct ttc tac cag ccc agc		2496	
Asn Thr Leu Ala Gly Gly Met Glu Gly Thr Pro Phe Tyr Gln Pro Ser			
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ccc tcc cag gac ttc atg ggc acc ttg gcc gat gtg gac aat gga aac		2544	
Pro Ser Gln Asp Phe Met Gly Thr Leu Ala Asp Val Asp Asn Gly Asn			
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acc aat gcc aat gga aac ctg gaa gag ctc ccc cct gcc cag ccc aca		2592	
Thr Asn Ala Asn Gly Asn Leu Glu Glu Leu Pro Pro Ala Gln Pro Thr			
770	775	780	
gcc cca ctc ccc gct gag cct gcc ccg tca tca gat gcc aat gat aat		2640	
Ala Pro Leu Pro Ala Glu Pro Ala Pro Ser Ser Asp Ala Asn Asp Asn			
785	790	795	800
gag tta cct tcc ccc gaa cca gag gag ctc atc tgt ccc caa acc acc		2688	
Glu Leu Pro Ser Pro Glu Pro Glu Glu Leu Ile Cys Pro Gln Thr Thr			
805	810	815	
cac caa act gcc gag ccg gca gag gac aat aac aac aac gtg gcc acg		2736	
His Gln Thr Ala Glu Pro Ala Glu Asp Asn Asn Asn Val Ala Thr			
820	825	830	
gtc ccc acc acg gag cag atc ccg agt cct gtg gct gag gcc cca tct		2784	
Val Pro Thr Thr Glu Gln Ile Pro Ser Pro Val Ala Glu Ala Pro Ser			
835	840	845	
cca ggg gaa gag cag gtc cct cca gca cct ctt ccc cct gcc agc cac		2832	
Pro Gly Glu Glu Gln Val Pro Pro Ala Pro Leu Pro Pro Ala Ser His			
850	855	860	
cct cct gcc acc tcc acg aac aag cgg acc aac ttg aag aag ccc aac		2880	
Pro Pro Ala Thr Ser Thr Asn Lys Arg Thr Asn Leu Lys Lys Pro Asn			
865	870	875	880
tgc gag cgg acg ggg cac ggg ctg aga gtc cgg ttt aac ccc ctg gca		2928	
Ser Glu Arg Thr Gly His Gly Leu Arg Val Arg Phe Asn Pro Leu Ala			
885	890	895	
ctg ctc cta gac gcg tct ctg gaa gga gag ttc gat ctg gtg cag agg		2976	
Leu Leu Leu Asp Ala Ser Leu Glu Gly Glu Phe Asp Leu Val Gln Arg			
900	905	910	
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Ile Ile Tyr Glu Val Glu Asp Pro Ser Lys Pro Asn Asp Glu Gly Ile			
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acc cca ctg cac aac gcc gtc tgc gcc ggc cac cat cac atc gtg aag		3072	

Thr Pro Leu His Asn Ala Val Cys Ala Gly His His His Ile Val Lys			
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Phe Leu Leu Asp Phe Gly Val Asn Val Asn Ala Ala Asp Ser Asp Gly			
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tgg acg ccg ctg cac tgc gct gcc tct tgt aac agc gtt cac ctc tgc		3168	
Trp Thr Pro Leu His Cys Ala Ala Ser Cys Asn Ser Val His Leu Cys			
965	970	975	
aaa cag ctg gtg gag agt ggt gcc gcc att ttt gcc tca acc ata agc		3216	
Lys Gln Leu Val Glu Ser Gly Ala Ala Ile Phe Ala Ser Thr Ile Ser			
980	985	990	
gac att gaa act gct gca gac aag tgt gag gag atg gag gaa ggc tac		3264	
Asp Ile Glu Thr Ala Ala Asp Lys Cys Glu Glu Met Glu Glu Gly Tyr			
995	1000	1005	
atc cag tgc tcc cag ttt cta tat ggg gtg cag gaa aag ctg ggt gtg		3312	
Ile Gln Cys Ser Gln Phe Leu Tyr Gly Val Gln Glu Lys Leu Gly Val			
1010	1015	1020	
atg aac aaa ggt gtg gcg tat gct ctg tgg gac tac gag gcc cag aac		3360	
Met Asn Lys Gly Val Ala Tyr Ala Leu Trp Asp Tyr Glu Ala Gln Asn			
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agt gac gag ctg tcc ttc cac gaa ggg gac gcc ctc acc atc ctg agg		3408	
Ser Asp Glu Leu Ser Phe His Glu Gly Asp Ala Leu Thr Ile Leu Arg			
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cgc aag gac gaa agc gag act gag tgg tgg tgg gct cgc ctt gga gac		3456	
Arg Lys Asp Glu Ser Glu Thr Glu Trp Trp Trp Ala Arg Leu Gly Asp			
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cgg gag ggc tat gtg ccc aaa aac ctg ctg ggg ctg tat cca cgg atc		3504	
Arg Glu Gly Tyr Val Pro Lys Asn Leu Leu Gly Leu Tyr Pro Arg Ile			
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Lys Pro Arg Gln Arg Thr Leu Ala *			
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aaaaaaaaaa	4945

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	Met His Val	
	1	
gat atg gat tgc ttc ttt gta tca gtg ggt ata cga aat aga cca gat	163	
Asp Met Asp Cys Phe Phe Val Ser Val Gly Ile Arg Asn Arg Pro Asp		
5	10	15
ctc aaa gga aaa cca gtg gct gtt aca agt aac aga ggc aca gga agg	211	
Leu Lys Gly Lys Pro Val Ala Val Thr Ser Asn Arg Gly Thr Gly Arg		
20	25	30
35		
gca cct tta cgt cct ggc gct aac ccc cag ctg gag tgg cag tat tac	259	
Ala Pro Leu Arg Pro Gly Ala Asn Pro Gln Leu Glu Trp Gln Tyr Tyr		
40	45	50
cag aat aaa atc ctg aaa ggc aaa gca gat ata cca gat tca tca ttg	307	
Gln Asn Lys Ile Leu Lys Gly Lys Ala Asp Ile Pro Asp Ser Ser Leu		
55	60	65
tgg gag aat cca gat tct gcg caa gca aat gga att gat tct gtt ttg	355	
Trp Glu Asn Pro Asp Ser Ala Gln Ala Asn Gly Ile Asp Ser Val Leu		

70	75	80	
tca agg gct gaa att gca tct tgt agt tat gag gcc agg caa ctt ggc Ser Arg Ala Glu Ile Ala Ser Cys Ser Tyr Glu Ala Arg Gln Leu Gly			403
85	90	95	
att aag aac gga atg ttt ttt ggg cat gct aaa caa cta tgt cct aat Ile Lys Asn Gly Met Phe Phe Gly His Ala Lys Gln Leu Cys Pro Asn			451
100	105	110	115
ctt caa gct gtt cca tac gat ttt cat gca tat aag gaa gtc gca caa Leu Gln Ala Val Pro Tyr Asp Phe His Ala Tyr Lys Glu Val Ala Gln			499
120	125	130	
aca ttg tat gaa aca ttg gca agc tac act cat aac att gaa gct gtc Thr Leu Tyr Glu Thr Leu Ala Ser Tyr Thr His Asn Ile Glu Ala Val			547
135	140	145	
agt tgt gat gaa gcg ctg gta gac att acc gaa atc ctt gca gag acc Ser Cys Asp Glu Ala Leu Val Asp Ile Thr Glu Ile Leu Ala Glu Thr			595
150	155	160	
aaa ctt act cct gat gaa ttt gca aat gct gtt cgt atg gaa atc aaa Lys Leu Thr Pro Asp Glu Phe Ala Asn Ala Val Arg Met Glu Ile Lys			643
165	170	175	
gac cag acg aaa tgt gct gcc tct gtt gga att ggt tct aat att ctc Asp Gln Thr Lys Cys Ala Ala Ser Val Gly Ile Gly Ser Asn Ile Leu			691
180	185	190	195
ctg gct aga atg gca act aga aaa gca aaa cca gat ggg cag tac cac Leu Ala Arg Met Ala Thr Arg Lys Ala Lys Pro Asp Gly Gln Tyr His			739
200	205	210	
cta aaa cca gaa gaa gta gat gat ttt atc aga ggc cag cta gtg acc Leu Lys Pro Glu Glu Val Asp Asp Phe Ile Arg Gly Gln Leu Val Thr			787
215	220	225	
aat cta cca gga gtt gga cat tca atg gaa tct aag ttg gca tct ttg Asn Leu Pro Gly Val Gly His Ser Met Glu Ser Lys Leu Ala Ser Leu			835
230	235	240	
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245	250	255	
caa aaa gaa ttt ggt ccc aaa aca ggt cag atg ctt tat agg ttc tgc Gln Lys Glu Phe Gly Pro Lys Thr Gly Gln Met Leu Tyr Arg Phe Cys			931
260	265	270	275
cgt ggc ttg gat gat aga cca gtt cga act gaa aag gaa aga aaa tct Arg Gly Leu Asp Asp Arg Pro Val Arg Thr Glu Lys Glu Arg Lys Ser			979
280	285	290	
gtt tca gct gag atc aac tat gga ata agg ttt act cag cca aaa gag Val Ser Ala Glu Ile Asn Tyr Gly Ile Arg Phe Thr Gln Pro Lys Glu			1027
295	300	305	
gca gaa gct ttt ctt ctg agt ctt tca gaa gaa att caa aga aga cta Ala Glu Ala Phe Leu Leu Ser Leu Ser Glu Glu Ile Gln Arg Arg Leu			1075
310	315	320	
gaa gcc act ggc atg aag ggt aaa cgt cta act ctc aaa atc atg gta Glu Ala Thr Gly Met Lys Gly Lys Arg Leu Thr Leu Lys Ile Met Val			1123

325	330	335	
cga aag cct ggg gct cct gta gaa act gca aaa ttt gga ggc cat gga Arg Lys Pro Gly Ala Pro Val Glu Thr Ala Lys Phe Gly Gly His Gly			1171
340	345	350	355
att tgt gat aac att gcc agg act gta act ctt gac cag gca aca gat Ile Cys Asp Asn Ile Ala Arg Thr Val Thr Leu Asp Gln Ala Thr Asp			1219
360	365	370	
aat gca aaa ata att gga aag gcg atg cta aac atg ttt cat aca atg Asn Ala Lys Ile Ile Gly Lys Ala Met Leu Asn Met Phe His Thr Met			1267
375	380	385	
aaa cta aat ata tca gat atg aga ggg gtt ggg att cac gtg aat cag Lys Leu Asn Ile Ser Asp Met Arg Gly Val Gly Ile His Val Asn Gln			1315
390	395	400	
ttg gtt cca act aat ctg aac cct tcc aca tgt ccc agt cgc cca tca Leu Val Pro Thr Asn Leu Asn Pro Ser Thr Cys Pro Ser Arg Pro Ser			1363
405	410	415	
gtt cag tca agc cac ttt cct agt ggg tca tac tct gtc cgt gat gtc Val Gln Ser Ser His Phe Pro Ser Gly Ser Tyr Ser Val Arg Asp Val			1411
420	425	430	435
ttc caa gtt cag aaa gct aag aaa tcc acc gaa gag gag cac aaa gaa Phe Gln Val Gln Lys Ala Lys Ser Thr Glu Glu Glu His Lys Glu			1459
440	445	450	
gta ttt cgg gct gtc gat ctg gaa ata tca tct gct tct aga act Val Phe Arg Ala Ala Val Asp Leu Glu Ile Ser Ser Ala Ser Arg Thr			1507
455	460	465	
tgc act ttc ttg cca cct ttt cct gca cat ctg ccg acc agt cct gat Cys Thr Phe Leu Pro Pro Phe Pro Ala His Leu Pro Thr Ser Pro Asp			1555
470	475	480	
act aac aag gct gag tct tca ggg aaa tgg aat ggt cta cat act cct Thr Asn Lys Ala Glu Ser Ser Gly Lys Trp Asn Gly Leu His Thr Pro			1603
485	490	495	
gtc agt gtg cag tcg aga ctt aac ctg agt ata gag gtc ccg tca cct Val Ser Val Gln Ser Arg Leu Asn Leu Ser Ile Glu Val Pro Ser Pro			1651
500	505	510	515
tcc cag ctg gat cag tct gtt tta gaa gca ctt cca cct gat ctc ccg Ser Gln Leu Asp Gln Ser Val Leu Glu Ala Leu Pro Pro Asp Leu Arg			1699
520	525	530	
gaa caa gta gag caa gtc tgt gct gtc cag caa gca gag tca cat ggc Glu Gln Val Glu Gln Val Cys Ala Val Gln Gln Ala Glu Ser His Gly			1747
535	540	545	
gac aaa aag aaa gaa cca gta aat ggc tgt aat aca gga att ttg cca Asp Lys Lys Glu Pro Val Asn Gly Cys Asn Thr Gly Ile Leu Pro			1795
550	555	560	
caa cca gtt ggg aca gtc ttg ttc caa ata cca gaa cct caa gaa tcg Gln Pro Val Gly Thr Val Leu Leu Gln Ile Pro Glu Pro Gln Glu Ser			1843
565	570	575	
aac agt gac gca gga ata aat tta ata gcc ctt cca gca ttt tca cag Asn Ser Asp Ala Gly Ile Asn Leu Ile Ala Leu Pro Ala Phe Ser Gln			1891

580	585	590	595	
gtg gac cct gag gta ttt gct gcc ctt cct gct gaa ctt cag agg gag Val Asp Pro Glu Val Phe Ala Ala Leu Pro Ala Glu Leu Gln Arg Glu 600		605		610
ctg aaa gca gca tat gat caa aga caa agg cag ggc gag aac agc act Leu Lys Ala Ala Tyr Asp Gln Arg Gln Arg Gln Gly Glu Asn Ser Thr 615		620		625
cac cag cag tca gcc agc gca tct gtg cca aag aat cct tta ctt cat His Gln Gln Ser Ala Ser Ala Ser Val Pro Lys Asn Pro Leu Leu His 630		635		640
cta aag gca gca gtg aaa gaa aag aaa aga aac aag aag aaa aaa acc Leu Lys Ala Ala Val Lys Glu Lys Lys Arg Asn Lys Lys Lys Lys Thr 645		650		655
atc ggt tca cca aaa agg att cag agt cct ttg aat aac aag ctg ctt Ile Gly Ser Pro Lys Arg Ile Gln Ser Pro Leu Asn Asn Lys Leu Leu 660		665		670
aac agt cct gca aaa act ctg cca ggg gcc tgc ggc agt ccc cag aag Asn Ser Pro Ala Lys Thr Leu Pro Gly Ala Cys Gly Ser Pro Gln Lys 680		685		690
tta att gat ggg ttt cta aaa cat gaa gga cct cct gca gag aaa ccc Leu Ile Asp Gly Phe Leu Lys His Glu Gly Pro Pro Ala Glu Lys Pro 695		700		705
ctg gaa gaa ctc tct gct tct act tca ggt gtg cca ggc ctt tct agt Leu Glu Leu Ser Ala Ser Thr Ser Gly Val Pro Gly Leu Ser Ser 710		715		720
ttg cag tct gac cca gct ggc tgc gaa cct cca gca ccc aat cta Leu Gln Ser Asp Pro Ala Gly Cys Val Arg Pro Pro Ala Pro Asn Leu 725		730		735
gct gga gct gtt gaa ttc aat gat gtg aag acc ttg ctc aga gaa tgg Ala Gly Ala Val Glu Phe Asn Asp Val Lys Thr Leu Leu Arg Glu Trp 740		745		750
ata act aca att tca gat cca atg gaa gaa gac att ctc caa gtt gtg Ile Thr Thr Ile Ser Asp Pro Met Glu Asp Ile Leu Gln Val Val 760		765		770
aaa tac tgt act gat cta ata gaa gaa aaa gat ttg gaa aaa ctg gat Lys Tyr Cys Thr Asp Leu Ile Glu Glu Lys Asp Leu Glu Lys Leu Asp 775		780		785
cta gtt ata aaa tac atg aaa agg ctg atg cag caa tcg gtg gaa tcg Leu Val Ile Lys Tyr Met Lys Arg Leu Met Gln Gln Ser Val Glu Ser 790		795		800
gtt tgg aat atg gca ttt gac ttt att ctt gac aat gtc cag gtg gtt Val Trp Asn Met Ala Phe Asp Phe Ile Leu Asp Asn Val Gln Val Val 805		810		815
tta caa caa act tat gga agc aca tta aaa gtt aca taa atattaccag Leu Gln Gln Thr Tyr Gly Ser Thr Leu Lys Val Thr *820		825		830
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 a 2913

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 ggggtgaccc tggcccttgg agccctcacc atg aat acc aag gac acc acc 171  
 Met Asn Thr Lys Asp Thr Thr  
 1 5  
 gag gtt gct gaa aac agc cac cac ctg aag atc ttt ctc ccc aag aag 219  
 Glu Val Ala Glu Asn Ser His His Leu Lys Ile Phe Leu Pro Lys Lys  
 10 15 20  
 ctg ctg gag tgt ctt cct cgc tgc ccg ctg cct cca gag agg cta 267  
 Leu Leu Glu Cys Leu Pro Arg Cys Pro Leu Leu Pro Pro Glu Arg Leu  
 25 30 35  
 cgg tgg aat aca aat gag gag att gca tcc tac ctg atc acc ttt gag 315  
 Arg Trp Asn Thr Asn Glu Glu Ile Ala Ser Tyr Leu Ile Thr Phe Glu  
 40 45 50 55  
 aag cat gat gag tgg ctg tct tgt gcc cca aag aca agg cct cag aat 363  
 Lys His Asp Glu Trp Leu Ser Cys Ala Pro Lys Thr Arg Pro Gln Asn  
 60 65 70  
 ggc tcc atc atc ctc tac aat cgc aag aag gtg aaa tat cgg aag gat 411  
 Gly Ser Ile Ile Leu Tyr Asn Arg Lys Lys Val Lys Tyr Arg Lys Asp  
 75 80 85  
 ggt tac ctc tgg aag aag cgg aag gat ggg aag acc acc cga gag gac 459  
 Gly Tyr Leu Trp Lys Lys Arg Lys Asp Gly Lys Thr Arg Glu Asp  
 90 95 100  
 cac atg aag ctg aag gtc cag ggc atg gag tgt ctc tat ggc tgc tac 507  
 His Met Lys Leu Lys Val Gln Gly Met Glu Cys Leu Tyr Gly Cys Tyr  
 105 110 115  
 gtt cac tct tcc atc gtc ccc aca ttc cat cgg cgc tgc tac tgg ctg 555  
 Val His Ser Ser Ile Val Pro Thr Phe His Arg Arg Cys Tyr Trp Leu  
 120 125 130 135  
 ctc cag aac cct gac atc gtc ctt gtg cac tac ctg aac gtc cca gcc 603

Leu Gln Asn Pro Asp Ile Val Leu Val His Tyr Leu Asn Val Pro Ala		
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Leu Glu Asp Cys Gly Lys Gly Cys Ser Pro Ile Phe Cys Ser Ile Ser		
155	160	165
agc gac cgt cga gag tgg ctg aag tgg tcc cgg gag gag ttg ttg gga		699
Ser Asp Arg Arg Glu Trp Leu Lys Trp Ser Arg Glu Glu Leu Leu Gly		
170	175	180
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Gln Leu Lys Pro Met Phe His Gly Ile Lys Trp Ser Cys Gly Asn Gly		
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Thr Glu Glu Phe Ser Val Glu His Leu Val Gln Gln Ile Leu Asp Thr		
200	205	210
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His Pro Thr Lys Pro Ala Pro Arg Thr His Ala Cys Leu Cys Ser Gly		
220	225	230
ggg ctt ggt tct ggg agc ctt acc cac aaa tgc agc agc acg aaa cac		891
Gly Leu Gly Ser Gly Ser Leu Thr His Lys Cys Ser Ser Thr Lys His		
235	240	245
cgc atc atc tct ccc aaa gtg gag ccc cga gct tta acc ctg acc tct		939
Arg Ile Ile Ser Pro Lys Val Glu Pro Arg Ala Leu Thr Leu Thr Ser		
250	255	260
atc ccc cac cct cac ccc cca gag cct cct cca ctg ata gcc cca ctt		987
Ile Pro His Pro His Pro Pro Glu Pro Pro Pro Leu Ile Ala Pro Leu		
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ccc cca gag ctc ccc aag gca cac acc tcc cca tct tct tcc tct tct		1035
Pro Pro Glu Leu Pro Lys Ala His Thr Ser Pro Ser Ser Ser Ser Ser		
280	285	290
tcc tcc tca tca ggt ttt gca gag ccc cta gaa atc aga cct agc cct		1083
Ser Ser Ser Ser Gly Phe Ala Glu Pro Leu Glu Ile Arg Pro Ser Pro		
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Pro Thr Ser Arg Gly Gly Ser Ser Arg Gly Gly Thr Ala Ile Leu Leu		
315	320	325
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Leu Thr Gly Leu Glu Gln Arg Ala Gly Leu Thr Pro Thr Arg His		
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Leu Ala Pro Gln Ala Asp Pro Arg Pro Ser Met Ser Leu Ala Val Val		
345	350	355
gta ggc act gag cct tct gcc cca cca gct cct ccc agt cct gcc ttt		1275
Val Gly Thr Glu Pro Ser Ala Pro Pro Ala Pro Pro Ser Pro Ala Phe		
360	365	370
gac cct gat cgt ttt ctc aac agc ccc cag agg ggc cag aca tat gga		1323
Asp Pro Asp Arg Phe Leu Asn Ser Pro Gln Arg Gly Gln Thr Tyr Gly		
380	385	390
ggg ggg cag gga gta agc cca gac ttc ccc gag gca gag gcc gct cat		1371

Gly	Gly	Gln	Gly	Val	Ser	Pro	Asp	Phe	Pro	Glu	Ala	Glu	Ala	Ala	His	
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Thr	Pro	Cys	Ser	Ala	Leu	Glu	Pro	Ala	Ala	Ala	Leu	Glu	Pro	Gln	Ala	
410								415							420	
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Ala	Ala	Arg	Gly	Pro	Pro	Gln	Ser	Val	Ala	Gly	Gly	Arg	Arg	Gly		
425								430							435	
aac tgc ttc ttc atc caa gat gat gac agt ggg gag gag ctc aag ggt															1515	
Asn	Cys	Phe	Phe	Ile	Gln	Asp	Asp	Asp	Ser	Gly	Glu	Glu	Leu	Lys	Gly	
440								445							450	
cac ggg gct gcc cca ccc ata cct tca ccc cct ccc tca ccc cca ccc															1563	
His	Gly	Ala	Ala	Pro	Pro	Ile	Pro	Ser	Pro	Pro	Pro	Ser	Pro	Pro	Pro	
460								465							470	
tca cct gcc ccc ttg gag ccg tca agc agg gta gga aga gga gag gcc															1611	
Ser	Pro	Ala	Pro	Leu	Glu	Pro	Ser	Ser	Arg	Val	Gly	Arg	Gly	Glu	Ala	
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ttg ttt gga gga cct gtt ggg gcc agt gaa ctg gag ccc ttc agt ctt															1659	
Leu	Phe	Gly	Gly	Pro	Val	Gly	Ala	Ser	Glu	Leu	Glu	Pro	Phe	Ser	Leu	
490								495							500	
tca tca ttc cca gac ctt atg gga gaa ctc att agt gac gaa gct cca															1707	
Ser	Ser	Phe	Pro	Asp	Leu	Met	Gly	Glu	Leu	Ile	Ser	Asp	Glu	Ala	Pro	
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agc atc cct gct cca acc ccc cag ctg tct cct gct ett agc acc atc															1755	
Ser	Ile	Pro	Ala	Pro	Thr	Pro	Gln	Leu	Ser	Pro	Ala	Leu	Ser	Thr	Ile	
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aca gac ttc tcc cca gag tgg tcc tac cca gag ggt ggg gtc aag gtg															1803	
Thr	Asp	Phe	Ser	Pro	Glu	Trp	Ser	Tyr	Pro	Glu	Gly	Gly	Val	Lys	Val	
540								545							550	
ctc atc aca ggt cct tgg acc gaa gcc gcc gag cat tac tcc tgt gtc															1851	
Leu	Ile	Thr	Gly	Pro	Trp	Thr	Glu	Ala	Ala	Glu	His	Tyr	Ser	Cys	Val	
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ttt gat cac atc gca gtg cca gcc tca ctt gtc cag cct ggt gtc tta															1899	
Phe	Asp	His	Ile	Ala	Val	Pro	Ala	Ser	Leu	Val	Gln	Pro	Gly	Val	Leu	
570								575							580	
cgc tgc tac tgt ccc gcc cat gag gta ggg ctg gtg tct ttg cag gtg															1947	
Arg	Cys	Tyr	Cys	Pro	Ala	His	Glu	Val	Gly	Leu	Val	Ser	Leu	Gln	Val	
585								590							595	
gca ggg cgg gag ggg ccc ctt tct gct tct gtg ctc ttt gag tat cga															1995	
Ala	Gly	Arg	Glu	Gly	Pro	Leu	Ser	Ala	Ser	Val	Leu	Phe	Glu	Tyr	Arg	
600								605							610	
gcc cgc cga ttc ctg tct ctg cct agt act caa ctt gac tgg ctg tca															2043	
Ala	Arg	Arg	Phe	Leu	Ser	Leu	Pro	Ser	Thr	Gln	Leu	Asp	Trp	Leu	Ser	
620								625							630	
ctg gac gac aac cag ttc cgg atg tcc ata cta gag cga ctg gag cag															2091	
Leu	Asp	Asp	Asn	Gln	Phe	Arg	Met	Ser	Ile	Leu	Glu	Arg	Leu	Glu	Gln	
635								640							645	
atg gag aag cgg atg gca gag atc gca gca gct ggg cag gtg cct tgc															2139	

Met Glu Lys Arg Met Ala Glu Ile Ala Ala Ala Gly Gln Val Pro Cys			
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cag ggt cct gat gct cct cca gtt cag gat gaa ggc cag ggg cct ggg			2187
Gln Gly Pro Asp Ala Pro Pro Val Gln Asp Glu Gly Gln Gly Pro Gly			
665	670	675	
ttc gaa gca cgg gta gtg gtc ttg gta gaa agc atg atc cca cgc tcc			2235
Phe Glu Ala Arg Val Val Val Leu Val Glu Ser Met Ile Pro Arg Ser			
680	685	690	695
acc tgg aag ggt cct gaa cgt ctg gcc cat gga agc ccc ttc cgg ggc			2283
Thr Trp Lys Gly Pro Glu Arg Leu Ala His Gly Ser Pro Phe Arg Gly			
700	705	710	
atg agc ctt ctg cac ctg gct gct gcc cag ggc tat gcc cgc ctc atc			2331
Met Ser Leu Leu His Leu Ala Ala Gln Gly Tyr Ala Arg Leu Ile			
715	720	725	
gag acc ctg agc cag tgg cgg agt gtg gag act gga agc ttg gac tta			2379
Glu Thr Leu Ser Gln Trp Arg Ser Val Glu Thr Gly Ser Leu Asp Leu			
730	735	740	
gag cag gag gtt gac ccg ctc aac gtg gat cat ttc tct tgc acc cct			2427
Glu Gln Glu Val Asp Pro Leu Asn Val Asp His Phe Ser Cys Thr Pro			
745	750	755	
ctg atg tgg gct tgt gcc ctg gga cac ctg gaa gct gct gtg ctc ctt			2475
Leu Met Trp Ala Cys Ala Leu Gly His Leu Glu Ala Ala Val Leu Leu			
760	765	770	775
tcc cgt tgg aac cga cag gca ctg agc att ccc gac tct ctg ggc cgt			2523
Phe Arg Trp Asn Arg Gln Ala Leu Ser Ile Pro Asp Ser Leu Gly Arg			
780	785	790	
ctg cca ttg tct gtg gct cat tcc cgg ggt cat gtg cgc ctt gcc cgc			2571
Leu Pro Leu Ser Val Ala His Ser Arg Gly His Val Arg Leu Ala Arg			
795	800	805	
tgc ctt gag gaa cta cag aga cag gag cct tcg gtg gag ccc cca ttt			2619
Cys Leu Glu Leu Gln Arg Gln Glu Pro Ser Val Glu Pro Pro Phe			
810	815	820	
gcc cta tcg cca ccc tcc tcc agc cca gac act ggt ctg agc agc gtc			2667
Ala Leu Ser Pro Pro Ser Ser Pro Asp Thr Gly Leu Ser Ser Val			
825	830	835	
tcc tcg ccc tcg gag ctg tcg gat ggc acc ttt tcc gtc acg tca gcc			2715
Ser Ser Pro Ser Glu Leu Ser Asp Gly Thr Phe Ser Val Thr Ser Ala			
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tat tct agt gcc cca gat ggc agt ccc ccc cct gca cct ctg cca gcc			2763
Tyr Ser Ser Ala Pro Asp Gly Ser Pro Pro Pro Ala Pro Leu Pro Ala			
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tct gag atg act atg gag gac atg gcc cca ggc cag ctt tcc tct ggt			2811
Ser Glu Met Thr Met Glu Asp Met Ala Pro Gly Gln Leu Ser Ser Gly			
875	880	885	
gtc cca gaa gcc ccc cta ctc ctc atg gac tat gag gct acc aac tcc			2859
Val Pro Glu Ala Pro Leu Leu Met Asp Tyr Glu Ala Thr Asn Ser			
890	895	900	
aag ggg ccc ctc tcc tcc ctt cct gcc ctc cca cca gct tca gat gat			2907

Lys Gly Pro Leu Ser Ser Leu Pro Ala Leu Pro Pro Ala Ser Asp Asp			
905	910	915	
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Gly Ala Ala Pro Glu Asp Ala Asp Ser Pro Gln Ala Val Asp Val Ile			
920	925	930	935
ccg gtg gac atg atc tca cta gcc aag cag atc atc gaa gcc aca ccg			3003
Pro Val Asp Met Ile Ser Leu Ala Lys Gln Ile Ile Glu Ala Thr Pro			
940	945	950	
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Glu Arg Ile Lys Arg Glu Asp Phe Val Gly Leu Pro Glu Ala Gly Ala			
955	960	965	
tca atg cgg gag cgg aca ggg gct gtg ggg ctc agt gag acc atg tcc			3099
Ser Met Arg Glu Arg Thr Gly Ala Val Gly Leu Ser Glu Thr Met Ser			
970	975	980	
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Trp Leu Ala Ser Tyr Leu Glu Asn Val Asp His Phe Pro Ser Ser Thr			
985	990	995	
cct ccc agc gaa ctg ccc ttt gag cga ggt cgc ctg gct gtc cct tca			3195
Pro Pro Ser Glu Leu Pro Phe Glu Arg Gly Arg Leu Ala Val Pro Ser			
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gca ccc tcc tgg gca gag ttt ctc tct gca tcc acc agt ggc aag atg			3243
Ala Pro Ser Trp Ala Glu Phe Leu Ser Ala Ser Thr Ser Gly Lys Met			
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gaa agt gat ttt gcc ctg ctg aca cta tca gat cac gag cag cgg gaa			3291
Glu Ser Asp Phe Ala Leu Leu Thr Leu Ser Asp His Glu Gln Arg Glu			
1035	1040	1045	
ctg tat gag gct gcc cga gtc atc cag acg gcc ttc cga aag tac aag			3339
Leu Tyr Glu Ala Ala Arg Val Ile Gln Thr Ala Phe Arg Lys Tyr Lys			
1050	1055	1060	
ggc cgg cgg ctg aag gag cag cag gag gta gca gca gct gta atc cag			3387
Gly Arg Arg Leu Lys Glu Gln Gln Glu Val Ala Ala Val Ile Gln			
1065	1070	1075	
cgc tgt tac cgg aag tac aag cag ctg acc tgg att gca ctt aag ttt			3435
Arg Cys Tyr Arg Lys Tyr Lys Gln Leu Thr Trp Ile Ala Leu Lys Phe			
1080	1085	1090	1095
gca ctc tat aag aag atg acc cag gcg gcc atc ctg atc cag agc aag			3483
Ala Leu Tyr Lys Lys Met Thr Gln Ala Ala Ile Leu Ile Gln Ser Lys			
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Phe Arg Ser Tyr Tyr Glu Gln Lys Arg Phe Gln Gln Ser Arg Arg Ala			
1115	1120	1125	
gct gtg ctc atc cag cag cac tac cgc tcc tac cgc cgc agg ccc ggc			3579
Ala Val Leu Ile Gln Gln His Tyr Arg Ser Tyr Arg Arg Arg Pro Gly			
1130	1135	1140	
cct ccc cac cgg act tcg gcc acc ctg cct gcc cgc aac aaa ggc tcc			3627
Pro Pro His Arg Thr Ser Ala Thr Leu Pro Ala Arg Asn Lys Gly Ser			
1145	1150	1155	
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Phe Leu Thr Lys Lys Gln Asp Gln Ala Ala Arg Lys Ile Met Arg Phe			
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ctg cgg cgc tgc cga cac agg atg agg gaa ctg aag cag aac cag gag			3723
Leu Arg Arg Cys Arg His Arg Met Arg Glu Leu Lys Gln Asn Gln Glu			
1180	1185	1190	
ctg gaa ggg ctt ccc cag ccg gga ctg gcc aca tga cctg gccaccgcct			3773
Leu Glu Gly Leu Pro Gln Pro Gly Leu Ala Thr *			
1195	1200		
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ttttcccttc ttttttctg ctctctctc tctcatttttca tctgcctttt		180
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aacaatcgaa cactttgaga actaacttggaa gacagtcttg tagggaaat ctgtatggaa		300
ttatctgctt ttatggtaa cttggcattt gtgaatggaa atcttgcattt caatattat		360
tgcttagcaaa aacaagaaaaa agaacacagg agtaaaaacgt ggattttctt gaatacgtat		420

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	1 5	
ttg att ctc tta tac gct act ttt act cag agt ttg aag gtt gtg acc		579
Leu Ile Leu Leu Tyr Ala Thr Phe Thr Gln Ser Leu Lys Val Val Thr	10 15 20	
aaa aga ggc tcc gcc gat gga tgc act gac tgg tct atc gat atc aag		627
Lys Arg Gly Ser Ala Asp Gly Cys Thr Asp Trp Ser Ile Asp Ile Lys	25 30 35	
aaa tat caa gtt ttg gtg gga gag cct gtt cga atc aaa tgt gca ctc		675
Lys Tyr Gln Val Leu Val Gly Glu Pro Val Arg Ile Lys Cys Ala Leu	40 45 50 55	
ttt tat ggt tat atc aga aca aat tac tcc ctt gcc caa agt gct gga		723
Phe Tyr Gly Tyr Ile Arg Thr Asn Tyr Ser Leu Ala Gln Ser Ala Gly	60 65 70	
ctc agt ttg atg tgg tac aaa agt tct ggt cct gga gac ttt gaa gag		771
Leu Ser Leu Met Trp Tyr Lys Ser Ser Gly Pro Gly Asp Phe Glu Glu	75 80 85	
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Pro Ile Ala Phe Asp Gly Ser Arg Met Ser Lys Glu Glu Asp Ser Ile	90 95 100	
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Trp Phe Arg Pro Thr Leu Leu Gln Asp Ser Gly Leu Tyr Ala Cys Val	105 110 115	
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Ile Arg Asn Ser Thr Tyr Cys Met Lys Val Ser Ile Ser Leu Thr Val	120 125 130 135	
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Gly Glu Asn Asp Thr Gly Leu Cys Tyr Asn Ser Lys Met Lys Tyr Phe	140 145 150	
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Glu Lys Ala Glu Leu Ser Lys Ser Lys Glu Ile Ser Cys Arg Asp Ile	155 160 165	
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Glu Asp Phe Leu Leu Pro Thr Arg Glu Pro Glu Ile Leu Trp Tyr Lys	170 175 180	
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Glu Cys Arg Thr Lys Thr Trp Arg Pro Ser Ile Val Phe Lys Arg Asp	185 190 195	
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Thr Leu Leu Ile Arg Glu Val Arg Glu Asp Asp Ile Gly Asn Tyr Thr	200 205 210 215	
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Cys Glu Leu Lys Tyr Gly Gly Phe Val Val Arg Arg Thr Thr Glu Leu	220 225 230	
act gtt aca gcc cct ctg act gat aag cca ccc aag ctt ttg tat cct		1251
Thr Val Thr Ala Pro Leu Thr Asp Lys Pro Pro Lys Leu Leu Tyr Pro		

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tta att tac tgg atg aaa gga gaa aaa ttt att gaa gat ctg gat gaa Leu Ile Tyr Trp Met Lys Gly Glu Lys Phe Ile Glu Asp Leu Asp Glu	280	285	1395
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aat cga gtt tgg gaa agt gac att aga att ctt aag gag cat ctt ggg Asn Arg Val Trp Glu Ser Asp Ile Arg Ile Leu Lys Glu His Leu Gly	300	305	1443
	310		
gaa cag gaa gtt tcc atc tca tta att gtg gac tct gtg gaa gaa ggt Glu Gln Glu Val Ser Ile Ser Leu Ile Val Asp Ser Val Glu Glu Gly	315	320	1491
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gac ttg gga aat tac tcc tgt tat gtt gaa aat gga aat gga cgt cga Asp Leu Gly Asn Tyr Ser Cys Tyr Val Glu Asn Gly Arg Arg	330	335	1539
	340		
cac gcc agc gtt ctc ctt cat aaa cga gag cta atg tac aca gtg gaa His Ala Ser Val Leu His Lys Arg Glu Leu Met Tyr Thr Val Glu	345	350	1587
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ctt gct gga ggc ctt ggt gct ata ctc ttg ctg ctt gta tgt ttg gtg Leu Ala Gly Leu Gly Ala Ile Leu Leu Leu Val Cys Leu Val	360	365	1635
	370	375	
acc atc tac aag tgt tac aag ata gaa atc atg ctc ttc tac agg aat Thr Ile Tyr Lys Cys Tyr Lys Ile Glu Ile Met Leu Phe Tyr Arg Asn	380	385	1683
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cat ttt gga gct gaa gag ctc gat gga gac aat aaa gat tat gat gca His Phe Gly Ala Glu Glu Leu Asp Gly Asp Asn Lys Asp Tyr Asp Ala	395	400	1731
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tac tta tca tac acc aaa gtg gat cct gac cag tgg aat caa gag act Tyr Leu Ser Tyr Thr Lys Val Asp Pro Asp Gln Trp Asn Gln Glu Thr	410	415	1779
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	435		
aag cat tat gga tat aag ttg ttt ata cca gat aga gat tta atc cca Lys His Tyr Gly Tyr Lys Leu Phe Ile Pro Asp Arg Asp Leu Ile Pro	440	445	1875
	450	455	
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cgg ctg att att gtc atg acc cca aat tac gta gtt aga agg ggc tgg Arg Leu Ile Ile Val Met Thr Pro Asn Tyr Val Val Arg Arg Gly Trp	475	480	1971
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agc atc ttt gag ctg gaa acc aga ctt cga aat atg ctt gtg act gga Ser Ile Phe Glu Leu Glu Thr Arg Leu Arg Asn Met Leu Val Thr Gly			2019

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gtc att aaa tgg cat gga cca aaa tgc aac aag ttg aac tcc aag ttc Val Ile Lys Trp His Gly Pro Lys Cys Asn Lys Leu Asn Ser Lys Phe	540	545	2163
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aca cat gag cag gct tta gat gtc agt gag caa ggg cct ttt ggg gag Thr His Glu Gln Ala Leu Asp Val Ser Glu Gln Gly Pro Phe Gly Glu	570	575	2259
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ctg cag act gtc tcg gcc att tcc atg gcc gcg gcc acc tcc aca gct Leu Gln Thr Val Ser Ala Ile Ser Met Ala Ala Ala Thr Ser Thr Ala	585	590	2307
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cta gcc act gcc cat cca gat ctc cgt tct acc ttt cac aac acg tac Leu Ala Thr Ala His Pro Asp Leu Arg Ser Thr Phe His Asn Thr Tyr	600	605	2355
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		615	
cat tca caa atg cgt cag aaa cac tac tac cga agc tat gag tac gac His Ser Gln Met Arg Gln Lys His Tyr Tyr Arg Ser Tyr Glu Tyr Asp	620	625	2403
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gta cct cct acc ggc acc ctg cct ctt acc tcc ata ggc aat cag cat Val Pro Pro Thr Gly Thr Leu Pro Leu Thr Ser Ile Gly Asn Gln His	635	640	2451
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acc tac tgt aac atc cct atg aca ctc atc aac ggg cag cggt cca cag Thr Tyr Cys Asn Ile Pro Met Thr Leu Ile Asn Gly Gln Arg Pro Gln	650	655	2499
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 cagaaaaaaag aatttgggtt ttgagctttt taaaaaaaaa aaagacaaac actttccttg 180  
 actttgagaa ataatttaag tcaaagaatc tgctctatgc taaccaagag atagagcaca 240  
 gcaaagatct gccagccccca ggcctctacc taggggcctg gaaattcaag tattcttatt 300  
 gggggaggcc atttgtttct gattagaagc tgtctaaacc tcctactcct caactcaaag 360  
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 Met Ala Lys Lys Val Ala Val Ile Gly Ala Gly  
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 Val Ser Gly Leu Ser Ser Ile Lys Cys Cys Val Asp Glu Asp Leu Glu  
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 Pro Thr Cys Phe Glu Arg Ser Asp Asp Ile Gly Gly Leu Trp Lys Phe  
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 45 50 55  
 aca aat gtc tgt aag gaa atg tca tgt tac agt gac ttc cct ttc cac 603  
 Thr Asn Val Cys Lys Glu Met Ser Cys Tyr Ser Asp Phe Pro Phe His  
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 Glu Asp Tyr Pro Asn Phe Met Asn His Glu Lys Phe Trp Asp Tyr Leu  
 80 85 90  
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 Gln Glu Phe Ala Glu His Phe Asp Leu Leu Lys Tyr Ile Gln Phe Lys  
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Gln Trp Asp Val Val Thr Glu Thr Glu Gly Lys Gln Asn Arg Ala Val			
125	130	135	
ttt gat gct gtt atg gtt tgc act gga cat ttc ctg aat ccc cat tta			843
Phe Asp Ala Val Met Val Cys Thr Gly His Phe Leu Asn Pro His Leu			
140	145	150	155
cct ttg gaa gcc ttt cct gga att cat aag ttt aaa ggt cag atc ctg			891
Pro Leu Glu Ala Phe Pro Gly Ile His Lys Phe Lys Gly Gln Ile Leu			
160	165	170	
cat agt caa gag tac aag atc cca gaa ggc ttt cag ggc aaa cgc gtc			939
His Ser Gln Glu Tyr Lys Ile Pro Glu Gly Phe Gln Gly Lys Arg Val			
175	180	185	
ttg gtg att ggt ctt ggg aac act gga gga gac att gct gtg gaa ctc			987
Leu Val Ile Gly Leu Gly Asn Thr Gly Gly Asp Ile Ala Val Glu Leu			
190	195	200	
agt cga acg gca gct cag gta ctt ctc agt act aga act ggt acc tgg			1035
Ser Arg Thr Ala Ala Gln Val Leu Leu Ser Thr Arg Thr Gly Thr Trp			
205	210	215	
gtt ctt ggg cgc tct tca gat tgg ggc tat cct tat aat atg atg gtt			1083
Val Leu Gly Arg Ser Ser Asp Trp Gly Tyr Pro Tyr Asn Met Met Val			
220	225	230	235
aca aga aga tgc tgt agt ttt att gca caa gtt ctg cct tca cgt ttt			1131
Thr Arg Arg Cys Cys Ser Phe Ile Ala Gln Val Leu Pro Ser Arg Phe			
240	245	250	
cta aac tgg att caa gaa agg aag ttg aat aag aga ttt aat cat gag			1179
Leu Asn Trp Ile Gln Glu Arg Lys Leu Asn Lys Arg Phe Asn His Glu			
255	260	265	
gat tat gga tta agt att acc aaa ggg aaa aaa gca aaa ttc att gtg			1227
Asp Tyr Gly Leu Ser Ile Thr Lys Gly Lys Lys Ala Lys Phe Ile Val			
270	275	280	
aat gat gag ctg cca aac tgt atc ctc tgt ggg gca atc act atg aaa			1275
Asn Asp Glu Leu Pro Asn Cys Ile Leu Cys Gly Ala Ile Thr Met Lys			
285	290	295	
acc agc gtg att gaa ttt aca gaa acc tct gct gtc ttt gaa gat ggg			1323
Thr Ser Val Ile Glu Phe Thr Glu Thr Ser Ala Val Phe Glu Asp Gly			
300	305	310	315
aca gtg gaa gaa aac att gat gtt gtg atc ttc act aca gga tat aca			1371
Thr Val Glu Glu Asn Ile Asp Val Val Ile Phe Thr Thr Gly Tyr Thr			
320	325	330	
ttt tct ttt cca ttt ttt gaa gaa cct ctt aaa agc ctc tgt aca aag			1419
Phe Ser Phe Pro Phe Glu Pro Leu Lys Ser Leu Cys Thr Lys			
335	340	345	
aag ata ttt cta tac aag caa gtc ttt ccc tta aac cta gag aga gcg			1467
Lys Ile Phe Leu Tyr Lys Gln Val Phe Pro Leu Asn Leu Glu Arg Ala			
350	355	360	
aca tta gcc atc atc ggc ctt atc ggc ctt aaa gga tcc atc tta tca			1515
Thr Leu Ala Ile Ile Gly Leu Ile Gly Leu Lys Gly Ser Ile Leu Ser			
365	370	375	
ggc aca gag ctc caa gca cga tgg gtc aca aga gta ttc aaa gga ctc			1563

Gly Thr Glu Leu Gln Ala Arg Trp Val Thr Arg Val Phe Lys Gly Leu			
380	385	390	395
tgt aag ata cct cca tcc caa aaa ttg atg atg gag gct act gaa aag			1611
Cys Lys Ile Pro Pro Ser Gln Lys Leu Met Met Glu Ala Thr Glu Lys			
400	405	410	
gaa cag ctc att aaa agg gga gtg ttt aaa gac acc agc aaa gac aaa			1659
Glu Gln Leu Ile Lys Arg Gly Val Phe Lys Asp Thr Ser Lys Asp Lys			
415	420	425	
ttt gac tac att gcc tac atg gat gat atc gct gcc tgc ata ggc aca			1707
Phe Asp Tyr Ile Ala Tyr Met Asp Asp Ile Ala Ala Cys Ile Gly Thr			
430	435	440	
aag ccc agc atc cca ctt ctg ttc ctc aag gat ccc aga cta gct tgg			1755
Lys Pro Ser Ile Pro Leu Leu Phe Leu Lys Asp Pro Arg Leu Ala Trp			
445	450	455	
gaa gtt ttc ttt gga cca tgt act cct tat cag tac cgc ctc atg ggc			1803
Glu Val Phe Phe Gly Pro Cys Thr Pro Tyr Gln Tyr Arg Leu Met Gly			
460	465	470	475
cct gga aaa tgg gat gga gcc aga aat gcc atc ctg acc cag tgg gac			1851
Pro Gly Lys Trp Asp Gly Ala Arg Asn Ala Ile Leu Thr Gln Trp Asp			
480	485	490	
aga aca ttg aaa cct tta aaa act cga att gtc cct gat tcc tcc aag			1899
Arg Thr Leu Lys Pro Leu Lys Thr Arg Ile Val Pro Asp Ser Ser Lys			
495	500	505	
cct gcc tcc atg tca cat tat tta aaa gcc tgg ggg gca cct gtc cta			1947
Pro Ala Ser Met Ser His Tyr Leu Lys Ala Trp Gly Ala Pro Val Leu			
510	515	520	
ctt gcc tct ctt cta ctt atc tgt aaa tct tca ctt ttc ttg aaa ttg			1995
Leu Ala Ser Leu Leu Ile Cys Lys Ser Ser Leu Phe Leu Lys Leu			
525	530	535	
gtg aga gat aaa cta cag gac aga atg tcc cct tac cta gta agt ctt			2043
Val Arg Asp Lys Leu Gln Asp Arg Met Ser Pro Tyr Leu Val Ser Leu			
540	545	550	555
tgg cga gga tga acc tgattttac aagggttaca ccaagtcatg ctaattctat			2098
Trp Arg Gly *			
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210	215	220	225	
gta ctg gct gga cat tcc cat aca gtg tcc gac tcc atc aag agt ctc Val Leu Ala Gly His Ser His Thr Val Ser Asp Ser Ile Lys Ser Leu	230	235	240	835
atc act tct atc agg gac aag gcc cct gga cag agg gag tgt tat tac Ile Thr Ser Ile Arg Asp Lys Ala Pro Gly Gln Arg Glu Cys Asp Tyr	245	250	255	883
tcc atc gat ggc atc aac cgg tgc atc cgg gac atc gag cag gcc tcg Ser Ile Asp Gly Ile Asn Arg Cys Ile Arg Asp Ile Glu Gln Ala Ser	260	265	270	931
ctg gcc gcc gtc agc cag agc ctg gcc acg agg gac gac atc tct gtg Leu Ala Ala Val Ser Gln Ser Leu Ala Thr Arg Asp Asp Ile Ser Val	275	280	285	979
gag gcc ctg cag gag cag ctg act tcg gtg gtc cag gaa atc gga cac Glu Ala Leu Gln Glu Gln Leu Thr Ser Val Val Gln Glu Ile Gly His	290	295	300	1027
ctt atc gat ccc atc gcc aca gcg gct cgg gga gaa gca gct cag ctg Leu Ile Asp Pro Ile Ala Thr Ala Arg Gly Glu Ala Ala Gln Leu	310	315	320	1075
gga cat aag gtg aca caa ctg gca agc tat ttt gag ccc ttg atc tta Gly His Lys Val Thr Gln Leu Ala Ser Tyr Phe Glu Pro Leu Ile Leu	325	330	335	1123
gcc gca gtt ggt gtg gcc tcc aag att ctt gat cat cag cag cag atg Ala Ala Val Gly Val Ala Ser Lys Ile Leu Asp His Gln Gln Gln Met	340	345	350	1171
acg gtg ctg gac cag acc aag act ctc gca gag tct gcc ttg cag atg Thr Val Leu Asp Gln Thr Lys Thr Leu Ala Glu Ser Ala Leu Gln Met	355	360	365	1219
ttg tat gca gcc aaa gaa ggt ggc gga aac ccc aag gca caa cac acc Leu Tyr Ala Ala Lys Glu Gly Gly Asn Pro Lys Ala Gln His Thr	370	375	380	1267
cat gac gcc atc aca gag gcc gcc cag ttg atg aag gaa gcc gtg gat His Asp Ala Ile Thr Glu Ala Ala Gln Leu Met Lys Glu Ala Val Asp	390	395	400	1315
gac atc atg gtg acg ctg aac gaa gct gcc agt gaa gtg ggg ctg gtt Asp Ile Met Val Thr Leu Asn Glu Ala Ala Ser Glu Val Gly Leu Val	405	410	415	1363
ggg ggc atg gtg gac gcc att gca gaa gcc atg agc aag ctg gat gaa Gly Gly Met Val Asp Ala Ile Ala Glu Ala Met Ser Lys Leu Asp Glu	420	425	430	1411
ggc act cct cca gaa cca aag gga aca ttt gtc gac tat cag acg act Gly Thr Pro Pro Glu Pro Lys Gly Thr Phe Val Asp Tyr Gln Thr Thr	435	440	445	1459
gtg gtt aaa tac tcc aaa agc att gcg gtg aca gct cag gaa atg atg Val Val Lys Tyr Ser Lys Ser Ile Ala Val Thr Ala Gln Glu Met Met	450	455	460	1507
act aag tcg gtt act aac ccg gag gag ttg gga gga ctg gct tca caa Thr Lys Ser Val Thr Asn Pro Glu Glu Leu Gly Leu Ala Ser Gln				1555

470	475	480	
atg acc agt gac tat ggg cac ctg gct ttc cag ggc cag atg gca gca Met Thr Ser Asp Tyr Gly His Leu Ala Phe Gln Gly Gln Met Ala Ala			1603
485	490	495	
gcc acg gcg gaa cca gag gag atc gga ttc cag att cgc act cgt gtg Ala Thr Ala Glu Pro Glu Glu Ile Gly Phe Gln Ile Arg Thr Arg Val			1651
500	505	510	
cag gac ctg ggc cac ggc tgt atc ttc ctg gtg cag aag gca ggg gcc Gln Asp Leu Gly His Gly Cys Ile Phe Leu Val Gln Lys Ala Gly Ala			1699
515	520	525	
ctc cag gtc tgc ccc aca gac agc tac acc aag agg gag ctg atc gaa Leu Gln Val Cys Pro Thr Asp Ser Tyr Thr Lys Arg Glu Leu Ile Glu			1747
530	535	540	545
tgc gcc cgt gcc gtc acg gaa aag gtc tcc ttg gtg ctc tcg gct ctc Cys Ala Arg Ala Val Thr Glu Lys Val Ser Leu Val Leu Ser Ala Leu			1795
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cag gcc ggg aac aaa gga acc cag gca tgc att aca gcc gcc acc gct Gln Ala Gly Asn Lys Gly Thr Gln Ala Cys Ile Thr Ala Ala Thr Ala			1843
565	570	575	
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580	585	590	
gcg ggg acg ctg aat gca gag aac agt gag acc ttc gca gac cac agg Ala Gly Thr Leu Asn Ala Glu Asn Ser Glu Thr Phe Ala Asp His Arg			1939
595	600	605	
gag aac att ctc aag acg gcc aag gcc ttg gta gaa gac acg aaa cta Glu Asn Ile Leu Lys Thr Ala Lys Ala Leu Val Glu Asp Thr Lys Leu			1987
610	615	620	625
ctt gtg tca gga gct gcg tcc act cct gac aag ctg gcc cag gcg gcc Leu Val Ser Gly Ala Ala Ser Thr Pro Asp Lys Leu Ala Gln Ala Ala			2035
630	635	640	
cag tcc tca gca gcc acc atc acc cag ctc gca gaa gtg gtc aag ctg Gln Ser Ser Ala Ala Thr Ile Thr Gln Leu Ala Glu Val Val Lys Leu			2083
645	650	655	
ggg gca gcc agc ctg ggc tcc gac gac ccc gag acc cag gtg gtt ttg Gly Ala Ala Ser Leu Gly Ser Asp Asp Pro Glu Thr Gln Val Val Leu			2131
660	665	670	
atc aat gcc atc aaa gat gtg gcc aag gcc ctt tct gat ctc atc agt Ile Asn Ala Ile Lys Asp Val Ala Lys Ala Leu Ser Asp Leu Ile Ser			2179
675	680	685	
gct acc aag gga gct gcc agc aag cca gtg gac gac cct tcc atg tac Ala Thr Lys Gly Ala Ala Ser Lys Pro Val Asp Asp Pro Ser Met Tyr			2227
690	695	700	705
cag ctc aag ggg gct gcc aag gtg atg gtg acc aat gtc acc tcg ctc Gln Leu Lys Gly Ala Ala Lys Val Met Val Thr Asn Val Thr Ser Leu			2275
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ctc aag act gta aag gca gtg gag gat gag gcc acc cgg ggc acc agg Leu Lys Thr Val Lys Ala Val Glu Asp Glu Ala Thr Arg Gly Thr Arg			2323

725	730	735	
gcg ctt gag gcc aca att gaa tgc ata aag cag gag ctt acg gtg ttc Ala Leu Glu Ala Thr Ile Glu Cys Ile Lys Gln Glu Leu Thr Val Phe 740	745	750	2371
cag tca aaa gac gta cct gaa aag aca tca tca cct gaa gaa tcc ata Gln Ser Lys Asp Val Pro Glu Lys Thr Ser Ser Pro Glu Glu Ser Ile 755	760	765	2419
agg atg acg aaa ggc atc acc atg gca aca gcc aaa gcc gtg gca gct Arg Met Thr Lys Gly Ile Thr Met Ala Thr Ala Lys Ala Val Ala Ala 770	775	780	2467
ggg aac tca tgt aga cag gag gac gtg att gct act gcc aac ctg agc Gly Asn Ser Cys Arg Gln Glu Asp Val Ile Ala Thr Ala Asn Leu Ser 790	795	800	2515
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att ctt cag aaa cca acc cca gaa ttc aag cag cag ctg gcc gct ttc Ile Leu Gln Lys Pro Thr Pro Glu Phe Lys Gln Gln Leu Ala Ala Phe 850	855	860	2707
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gcc atg aaa gga aca gag tgg gtg gat cca gaa gac cca act gtc att Ala Met Lys Gly Thr Glu Trp Val Asp Pro Glu Asp Pro Thr Val Ile 885	890	895	2803
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980	985	990	
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gat tca gag gcc atg agg cgg cta cag gct gca gga aat gct gtg aaa Asp Ser Glu Ala Met Arg Arg Leu Gln Ala Ala Gly Asn Ala Val Lys 1045 1050 1055			3283
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Lys Ala Ala Ala Leu Asn Leu Ser Ala Leu His Ser Pro Ala His Arg			
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cct ccg ggt ttc agt gta gct cag aag cca ttt gga gcc acg tat gta		149	
Pro Pro Gly Phe Ser Val Ala Gln Lys Pro Phe Gly Ala Thr Tyr Val			
25	30	35	
tgg agc agc atc ata aac act ctt caa aca caa gtg gaa gtg aaa aaa		197	
Trp Ser Ser Ile Ile Asn Thr Leu Gln Thr Gln Val Glu Val Lys Lys			
40	45	50	
cga agg cac cgt tta aaa cga cat aat gac tgc ttt gtt ggt tca gaa		245	
Arg Arg His Arg Leu Lys Arg His Asn Asp Cys Phe Val Gly Ser Glu			
55	60	65	70
gct gtg gat gtc att ttt tct cac cta att cag aat aag tat ttt ggt		293	
Ala Val Asp Val Ile Phe Ser His Leu Ile Gln Asn Lys Tyr Phe Gly			
75	80	85	
gat gta gat att cct cga gcc aaa gtg gtg aga gtg tgt caa gcg ctt		341	
Asp Val Asp Ile Pro Arg Ala Lys Val Val Arg Val Cys Gln Ala Leu			
90	95	100	
atg gac tac aaa gta ttt gaa gca gtt cca acc aaa gtc ttt gga aaa		389	
Met Asp Tyr Lys Val Phe Glu Ala Val Pro Thr Lys Val Phe Gly Lys			
105	110	115	
gac aaa aaa cct aca ttt gaa gat agt agt tgc agc ctt tat aga ttc		437	
Asp Lys Lys Pro Thr Phe Glu Asp Ser Ser Cys Ser Leu Tyr Arg Phe			
120	125	130	
acc aca ata cct aac caa gac agt cag tta ggc aaa gag aac aaa cta		485	
Thr Thr Ile Pro Asn Gln Asp Ser Gln Leu Gly Lys Glu Asn Lys Leu			
135	140	145	150
tat tca cct gcc agg tat gca gat gca tta ttt aag tca tcc gat atc		533	
Tyr Ser Pro Ala Arg Tyr Ala Asp Ala Leu Phe Lys Ser Ser Asp Ile			
155	160	165	
aga tca gcc agt tta gag gac ctg tgg gaa aat ctg agt tta aag cct		581	
Arg Ser Ala Ser Leu Glu Asp Leu Trp Glu Asn Leu Ser Leu Lys Pro			
170	175	180	
gcc aac tcc cct cat gta aat atc tct aca acc ttg tct cca caa gtt		629	
Ala Asn Ser Pro His Val Asn Ile Ser Thr Thr Leu Ser Pro Gln Val			
185	190	195	
att aat gaa gtg tgg caa gaa aca att ggg cgt cta cta caa ctt		677	
Ile Asn Glu Val Trp Gln Glu Glu Thr Ile Gly Arg Leu Leu Gln Leu			
200	205	210	
gta gac ctt cca ctt ctt gac tcc tta ctg aaa cag caa gag gct gta		725	
Val Asp Leu Pro Leu Leu Asp Ser Leu Leu Lys Gln Gln Glu Ala Val			
215	220	225	230
cct aaa att cct caa cct aag agg cag tcc acc atg gtc aac agc agt		773	
Pro Lys Ile Pro Gln Pro Lys Arg Gln Ser Thr Met Val Asn Ser Ser			
235	240	245	
aac tat ctg gat cga ggg att ctc aag gct tat agt gac tct cag gaa		821	
Asn Tyr Leu Asp Arg Gly Ile Leu Lys Ala Tyr Ser Asp Ser Gln Glu			
250	255	260	
gat gag tgg ctc tcg gca gca att gac tgt tta gaa tac ctt cca gac		869	

Asp Glu Trp Leu Ser Ala Ala Ile Asp Cys Leu Glu Tyr Leu Pro Asp			
265	270	275	
caa atg gtg gtg gaa ata agc aga agc ttt cct gag caa cca gac cga		917	
Gln Met Val Val Glu Ile Ser Arg Ser Phe Pro Glu Gln Pro Asp Arg			
280	285	290	
aca gac tta gtg aaa gaa ctt ctg ttt gat gcc att ggc aga tat tac		965	
Thr Asp Leu Val Lys Glu Leu Leu Phe Asp Ala Ile Gly Arg Tyr Tyr			
295	300	305	310
agt agt agg gaa cct ctg tta aat cac tta tct gac gtt cat aat gga		1013	
Ser Ser Arg Glu Pro Leu Leu Asn His Leu Ser Asp Val His Asn Gly			
315	320	325	
att gca gaa ctc tta gtg aat ggg aag acg gaa ata gct tta gaa gct		1061	
Ile Ala Glu Leu Leu Val Asn Gly Lys Thr Glu Ile Ala Leu Glu Ala			
330	335	340	
acc cag ctc ctt cta aag ctt tta gat ttc caa aat aga gaa gaa ttt		1109	
Thr Gln Leu Leu Lys Leu Leu Asp Phe Gln Asn Arg Glu Glu Phe			
345	350	355	
aga aga cta ctg tat ttc atg gct gtt gca gca aat cct tct gag ttt		1157	
Arg Arg Leu Leu Tyr Phe Met Ala Val Ala Ala Asn Pro Ser Glu Phe			
360	365	370	
aaa tta cag aaa gaa agt gac aac cga atg gtt gtg aaa agg ata ttc		1205	
Lys Leu Gln Lys Glu Ser Asp Asn Arg Met Val Val Lys Arg Ile Phe			
375	380	385	390
tca aaa gct att gtt gac aat aaa aat tta tcc aaa ggc aaa aca gat		1253	
Ser Lys Ala Ile Val Asp Asn Lys Asn Leu Ser Lys Gly Lys Thr Asp			
395	400	405	
ctt ctg gta ctc ttt tta atg gat cat cag aaa gat gtt ttt aag att		1301	
Leu Leu Val Leu Phe Leu Met Asp His Gln Lys Asp Val Phe Lys Ile			
410	415	420	
cct gga act cta cat aaa att gta agt gtt aag ctt atg gcc ata cag		1349	
Pro Gly Thr Leu His Lys Ile Val Ser Val Lys Leu Met Ala Ile Gln			
425	430	435	
aac gga aga gat cca aat aga gat gca gga tat att tat tgc cag aga		1397	
Asn Gly Arg Asp Pro Asn Arg Asp Ala Gly Tyr Ile Tyr Cys Gln Arg			
440	445	450	
att gat caa cgt gac tat tcc aac aat aca gag aag aca acc aaa gat		1445	
Ile Asp Gln Arg Asp Tyr Ser Asn Asn Thr Glu Lys Thr Lys Asp			
455	460	465	470
gag ctg ttg aat tta cta aaa act ctt gat gag gat tca aaa ctt tct		1493	
Glu Leu Leu Asn Leu Leu Lys Thr Leu Asp Glu Asp Ser Lys Leu Ser			
475	480	485	
gcc aaa gag aag aaa aaa ttg cta ggt caa ttc tat aag tgt cac cca		1541	
Ala Lys Glu Lys Lys Leu Leu Gly Gln Phe Tyr Lys Cys His Pro			
490	495	500	
gac atc ttt att gag cat ttt gga gac tga g tttttatatat ctgttatataa		1592	
Asp Ile Phe Ile Glu His Phe Gly Asp *			
505	510		
gttgtgtatt ttaagaataa attatgtatc ctaaatatcc aatcacatcc gtaagtgtgg		1652	

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ttt gct gtc tct cag gcc cag atg aca cca agc cca tot gaa atg ttc Phe Ala Val Ser Gln Ala Gln Met Thr Pro Ser Pro Ser Glu Met Phe 160 165 170	891
att ccg gca aat gtg gtt ctg aaa tgg tat gaa aac ttt caa aga cga Ile Pro Ala Asn Val Val Leu Lys Trp Tyr Glu Asn Phe Gln Arg Arg 175 180 185	939
cta gca cag aac cct ctc ttt tgg aaa aca taa tttgaata aaataatttt Leu Ala Gln Asn Pro Leu Phe Trp Lys Thr *190 195	990
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ggt ccc ggg ccc tgg ggc tcg gga gtc ggg ggc ggt ggg aca gtg cgg Gly Pro Gly Pro Trp Gly Ser Gly Val Gly Gly Gly Thr Val Arg 15 20 25	110
cta ctc ttg atc ctc tcc ggc tgc ttg gtc tac ggc aca gct gaa act Leu Leu Leu Ile Leu Ser Gly Cys Leu Val Tyr Gly Thr Ala Glu Thr 30 35 40 45	158
gat gta aat gtg gtc atg ctt cag gaa tcc caa gtt tgt gaa aag cgt Asp Val Asn Val Val Met Leu Gln Glu Ser Gln Val Cys Glu Lys Arg 50 55 60	206
gcc agc caa caa ttc tgt tac aca aat gtg ctt atc cca caa tgg cat Ala Ser Gln Gln Phe Cys Tyr Thr Asn Val Leu Ile Pro Gln Trp His 65 70 75	254
gat ata tgg aca cgg ata cag atc cga gta aat agt tcc aga ttg gtt Asp Ile Trp Thr Arg Ile Gln Ile Arg Val Asn Ser Ser Arg Leu Val 80 85 90	302
cga gtc acc cag gtg gag aat gag gag aaa ctg aag gag cta gag cag Arg Val Thr Gln Val Glu Asn Glu Glu Lys Leu Lys Glu Leu Gln 95 100 105	350
ttt agt atc tgg aac ttt tcc tcc ttt tta aaa gag aaa ttg aat Phe Ser Ile Trp Asn Phe Phe Ser Ser Phe Leu Lys Glu Lys Leu Asn 110 115 120 125	398
	446

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gtt gag att ata gag aag gac acc aag tac agt gtc att gtg atc cgg Val Glu Ile Ile Glu Lys Asp Thr Lys Tyr Ser Val Ile Val Ile Arg 145 150 155	542
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415	420	425	
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gt当地cccttagc tctgttactca taactttct tt当地attttagt tagtgaaagg aaggaggagg	4706
aaaggaaattt aaatgtcctt ct当地tatttct ct当地gactcaa gtctgacata tgagataata	4766

acctatatgg aaatgccaaag aattgttatct gaaaacaagag aacagttga cacatttac	4826
atgccttcattt attacatatt aactgaaacc aattaataaa catatgaaat atccattgca	4886
caaggcaaag gcacctaacc cttttgtttc ttttctaca tagcagaaat tgatttttt	4946
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tgggcctta tgtgacacga gccagagcct gctggaaata aacaaagcag attcatgcca	5126
acaccaactc gtagctttag tggcagatgg gagtggtcac agactccaa aatgtggggc	5186
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acataacaaa tagttcataa tgtgaatattt agaaactgtt acagcctgca gttaccataa	5366
ttttccatgt ttgtgaaattt gatattgaaa tagcaggcgt aaggaattac tggcaagttt	5426
tagcctgtgg gtaataccctt agggttattt aaatattttt aattttattt aaatgttcat	5486
aatgtttga aaggaacaaa attatcaggg atggctctt gccatgggtc ttatccatc	5546
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 <212> DNA  
 <213> Homo sapiens

<220>  
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ccccggcggc tgagtctccg agcgccggg ctcggaaagcc acgagccagc tgaggcggtc	180
tccgttagt gcttacggca tgggtcagct ctttctgcca cctccgcctt cgccgtcctc	240
acctcttgc gggtaagtt acctttgggt tccagacct tggggcctg agggccaaac	300
tccggacgaa cccctaacc accctctttt tcctgtcatt ctccaactct tactttgtac	360
cacggaatca cttggcctta aagctagcca gtcggccgt gccttgaggc caggttcgag	420
agataaaggt aaccgtgggg aaagcgcccc cccagtggac aaaggcggtg gcaagaatag	480
agcaggcctg agggccatag gcgatgagaa taggcagttg aggggtgaaa aagaaaacaa	540
acaaacaaca acaacaaacc ctgaagagta ctgaagattt agaaggact gggaaaggact	600

tgttgcgca	atg gaa gaa tct gac tct gag aaa acg acg gag aaa gaa Met Glu Glu Ser Asp Ser Glu Lys Thr Thr Glu Lys Glu	648
	1 5 10	
aat ctg ggg ccg aga atg gat cca cca cta ggg gaa ccg gaa gga tcg Asn Leu Gly Pro Arg Met Asp Pro Pro Leu Gly Glu Pro Glu Gly Ser	696	
15 20 25		
ctt ggg tgg gtg cta cca aat aca gcc atg aag aaa aag gtg ctg ttg Leu Gly Trp Val Leu Pro Asn Thr Ala Met Lys Lys Lys Val Leu Leu	744	
30 35 40 45		
atg ggt aaa agt ggg tct ggt aag acc agc atg agg tct att atc ttt Met Gly Lys Ser Gly Ser Gly Lys Thr Ser Met Arg Ser Ile Ile Phe	792	
50 55 60		
gca aat tat att gcc aga gac aca cgt cgc ctt ggc gca aca ata cta Ala Asn Tyr Ile Ala Arg Asp Thr Arg Arg Leu Gly Ala Thr Ile Leu	840	
65 70 75		
gac cgt ata cat agt cttcaa att aat agc agt ttg agc acc tac tct Asp Arg Ile His Ser Leu Gln Ile Asn Ser Ser Leu Ser Thr Tyr Ser	888	
80 85 90		
ctc gta gac tct gtt gga aat aca aag aca ttt gat gta gaa cat tct Leu Val Asp Ser Val Gly Asn Thr Lys Thr Phe Asp Val Glu His Ser	936	
95 100 105		
cat gtt cga ttt ctg gga aac ctg gta ttg aac ctg tgg gat tgt ggt His Val Arg Phe Leu Gly Asn Leu Val Leu Asn Leu Trp Asp Cys Gly	984	
110 115 120 125		
ggg caa gac acc ttc atg gaa aat tat ttc act agc caa cgg gac aac Gly Gln Asp Thr Phe Met Glu Asn Tyr Phe Thr Ser Gln Arg Asp Asn	1032	
130 135 140		
atc ttc cga aat gtg gag gtt ctg att tat gtc ttt gat gtg gag agc Ile Phe Arg Asn Val Glu Val Leu Ile Tyr Val Phe Asp Val Glu Ser	1080	
145 150 155		
cgc gaa ctg gaa aag gac atg cac tat tac caa tca tgc ctg gag gcc Arg Glu Leu Glu Lys Asp Met His Tyr Tyr Gln Ser Cys Leu Glu Ala	1128	
160 165 170		
att ctg cag aat tct cca gat gcc aaa ata ttt tgc ttg gta cac aaa Ile Leu Gln Asn Ser Pro Asp Ala Lys Ile Phe Cys Leu Val His Lys	1176	
175 180 185		
atg gat ctg gta cag gag gat caa cgg gac ctg att ttt aaa gag cga Met Asp Leu Val Gln Glu Asp Gln Arg Asp Leu Ile Phe Lys Glu Arg	1224	
190 195 200 205		
gaa gaa gat ttg agg cgt ttg tct cgc cca ttg gaa tgt tct tgt ttc Glu Glu Asp Leu Arg Arg Leu Ser Arg Pro Leu Glu Cys Ser Cys Phe	1272	
210 215 220		
cga aca tct atc tgg gat gaa acc ctc tat aag gct tgg tcc agc ata Arg Thr Ser Ile Trp Asp Glu Thr Leu Tyr Lys Ala Trp Ser Ser Ile	1320	
225 230 235		
gtt tat cag ctg att ccc aat gtt cag cag ctg gaa atg aac cta agg Val Tyr Gln Leu Ile Pro Asn Val Gln Gln Leu Glu Met Asn Leu Arg	1368	
240 245 250		

aat ttt gct gaa att atc gaa gct gat gaa gta ctt ctt ttt gag aga Asn Phe Ala Glu Ile Ile Glu Ala Asp Glu Val Leu Leu Phe Glu Arg 255 260 265	1416
gct act ttt ctg gta att tct cac tat cag tgt aaa gag cag cgt gat Ala Thr Phe Leu Val Ile Ser His Tyr Gln Cys Lys Glu Gln Arg Asp 270 275 280 285	1464
gcc cat aga ttt gag aaa ata agc aac att att aag cag ttc aag ctg Ala His Arg Phe Glu Lys Ile Ser Asn Ile Ile Lys Gln Phe Lys Leu 290 295 300	1512
agc tgc agc aag ctg gct gcc tct ttc cag agt atg gaa gtc agg aac Ser Cys Ser Lys Leu Ala Ala Ser Phe Gln Ser Met Glu Val Arg Asn 305 310 315	1560
tct aac ttc gct gct ttc att gac atc ttt aca tcc aac act tat gtg Ser Asn Phe Ala Ala Phe Ile Asp Ile Phe Thr Ser Asn Thr Tyr Val 320 325 330	1608
atg gtt gtg atg tct gat ccg tcc att cct tct gca gct act ctg atc Met Val Val Met Ser Asp Pro Ser Ile Pro Ser Ala Ala Thr Leu Ile 335 340 345	1656
aac atc cgc aat gcc agg aaa cac ttt gaa aag ctg gaa aga gtg gat Asn Ile Arg Asn Ala Arg Lys His Phe Glu Lys Leu Glu Arg Val Asp 350 355 360 365	1704
gga cca aag cag tgt ctt ctc atg cgc taa a cattgatgaa tattgtttca Gly Pro Lys Gln Cys Leu Leu Met Arg * 370 375	1755
cacaaaaatt aaaagtttcc taattaatgt tgtattcata tatgtaggct ctgaaatgtt gtgatgctta ttgcttctgt atttcttctc tactccctag tcttaatgtt taaccttgaa tgctattaac ttaaatagcc attgaggagt tagaagatga attgttcatg aagtcgggt tacataaaag taggtgatat gtaagtttc tgataacaag gttctaatacg tgttaaatg tactggtaac ctggttccaa tagttgtgtt tgcccaagcc tttctcgca tcatacttgc ttccttatca gatagtaagt aacctgtaag tttggagtat tactgtttc tcagcatgca ttaaaaatat tccttaactt caaaaaaaaaaaaa 2149	1815 1875 1935 1995 2055 2115

<210> 493  
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<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (610)..(1650)

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tccgcttagt gcctacggca tgggtcagct ctttctgccca cctccgcctt cgccgtcctc	240
acctcttgc gggtaagtt acctttgggt ttccagacct tgggggcctg aggcccaaacc	300
tcgggacgaa cccctaacc acctotctt tcctgtcatt ctccaactct tactttgtac	360
cacggaatca cttggcctta aagctagcca gctcgccgt gccttgaggc caggttcgag	420
agataaaggt aaccgtgggg aaagcggccc cccagtggac aaaggcggag gcaagaatag	480
agcaggcctg agggccatag gcgatgagaa taggcagttg aggggtgaaa aagaaaacaa	540
acaacaaca acaacaaacc ctgaagagta ctgaagattt agaaggact ggaaaggact	600
tgttgcga atg gaa gaa tct gac tct gag aaa acg acg gag aaa gaa Met Glu Glu Ser Asp Ser Glu Lys Thr Thr Glu Lys Glu	648
1 5 10	
aat ctg ggg ccg aga atg gat cca cca cta ggg gaa ccg gaa gga tcg Asn Leu Gly Pro Arg Met Asp Pro Pro Leu Gly Glu Pro Glu Gly Ser	696
15 20 25	
ctt ggg tgg gtg cta cca aat aca gcc atg aag aaa aag gtg ctg ttg Leu Gly Trp Val Leu Pro Asn Thr Ala Met Lys Lys Val Leu Leu	744
30 35 40 45	
atg ggt aaa agt ggg tct ggt aag acc agc atg agg tct att atc ttt Met Gly Lys Ser Gly Ser Gly Lys Thr Ser Met Arg Ser Ile Ile Phe	792
50 55 60	
gca aat tat att gcc aga gac aca cgt cgc ctt ggc gca aca att gat Ala Asn Tyr Ile Ala Arg Asp Thr Arg Arg Leu Gly Ala Thr Ile Asp	840
65 70 75	
gta gaa cat tct cat gtt cga ttt ctg gga aac ctg gta ttg aac ctg Val Glu His Ser His Val Arg Phe Leu Gly Asn Leu Val Leu Asn Leu	888
80 85 90	
tgg gat tgt ggt ggg caa gac acc ttc atg gaa aat tat ttc act agc Trp Asp Cys Gly Gly Gln Asp Thr Phe Met Glu Asn Tyr Phe Thr Ser	936
95 100 105	
caa cgg gac aac atc ttc cga aat gtg gag gtt ctg att tat gtc ttt Gln Arg Asp Asn Ile Phe Arg Asn Val Glu Val Leu Ile Tyr Val Phe	984
110 115 120 125	
gat gtg gag agc cgc gaa ctg gaa aag gac atg cac tat tac caa tca Asp Val Glu Ser Arg Glu Leu Glu Lys Asp Met His Tyr Tyr Gln Ser	1032
130 135 140	
tgc ctg gag gcc att ctg cag aat tct cca gat gcc aaa ata ttt tgc Cys Leu Glu Ala Ile Leu Gln Asn Ser Pro Asp Ala Lys Ile Phe Cys	1080
145 150 155	
ttg gta cac aaa atg gat ctg gta cag gag gat caa cgg gac ctg att Leu Val His Lys Met Asp Leu Val Gln Glu Asp Gln Arg Asp Leu Ile	1128
160 165 170	
ttt aaa gag cga gaa gaa gat ttg agg cgt ttg tct cgc cca ttg gaa Phe Lys Glu Arg Glu Glu Asp Leu Arg Arg Leu Ser Arg Pro Leu Glu	1176
175 180 185	
tgt tct tgt ttc cga aca tct atc tgg gat gaa acc ctc tat aag gct	1224

Cys Ser Cys Phe Arg Thr Ser Ile Trp Asp Glu Thr Leu Tyr Lys Ala				
190	195	200	205	
tgg tcc agc ata gtt tat cag ctg att ccc aat gtt cag cag ctg gaa				1272
Trp Ser Ser Ile Val Tyr Gln Leu Ile Pro Asn Val Gln Gln Leu Glu				
210	215	220		
atg aac cta agg aat ttt gct gaa att atc gaa gct gat gaa gta ctt				1320
Met Asn Leu Arg Asn Phe Ala Glu Ile Ile Glu Ala Asp Glu Val Leu				
225	230	235		
ctt ttt gag aga gct act ttt ctg gta att tct cac tat cag tgt aaa				1368
Leu Phe Glu Arg Ala Thr Phe Leu Val Ile Ser His Tyr Gln Cys Lys				
240	245	250		
gag cag cgt gat gcc cat aga ttt gag aaa ata agc aac att att aag				1416
Glu Gln Arg Asp Ala His Arg Phe Glu Lys Ile Ser Asn Ile Ile Lys				
255	260	265		
cag ttc aag ctg agc tgc agc aag ctg gct gcc tct ttc cag agt atg				1464
Gln Phe Lys Leu Ser Cys Ser Lys Leu Ala Ala Ser Phe Gln Ser Met				
270	275	280	285	
gaa gtc agg aac tct aac ttc gct gct ttc att gac atc ttt aca tcc				1512
Glu Val Arg Asn Ser Asn Phe Ala Ala Phe Ile Asp Ile Phe Thr Ser				
290	295	300		
aac act tat gtg atg gtt gtg atg tct gat ccg tcc att cct tct gca				1560
Asn Thr Tyr Val Met Val Val Met Ser Asp Pro Ser Ile Pro Ser Ala				
305	310	315		
gct act ctg atc aac atc cgc aat gcc agg aaa cac ttt gaa aag ctg				1608
Ala Thr Leu Ile Asn Ile Arg Asn Ala Arg Lys His Phe Glu Lys Leu				
320	325	330		
gaa aga gtg gat gga cca aag cag tgg ctt ctc atg cgc taa acattga				1657
Glu Arg Val Asp Gly Pro Lys Gln Cys Leu Leu Met Arg *				
335	340	345		
tgaatattgt ttcacacaaa aattaaaaagt ttccataatta atgttgtatt catatatgtt				1717
ggctctgaaa tgggtgtatg cttattgctt ctgtatttct tctctactcc ctgtctttaa				1777
tgttaacct tgaatgctat taacttaaat agccatttag gagttagaag atgaattgtt				1837
catgaagtcg gtgttacata aaagtaggtg atatgtaagt tttctgataa caagggttcta				1897
atagtgttta aatgtactgg taacctgggtt ccaatagttt tggtttccccca agcctttctc				1957
ggcatcatct tggattccctt atcagatagt aagtaacctg taagtttggaa gtattactgt				2017
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<210> 494  
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 <212> DNA  
 <213> Homo sapiens

<220>  
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 <222> (610)..(1773)

<400> 494

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ccccgcggc tgagtctccg agcggccggg ctcggaagcc acgagccagc tgaggcggtc	180
tccgcttagt gcctacggca tgggtcagct cttctgcca cctccgcctt cgccgtcctc	240
acctcttgc gggtaagtt accttgggt ttccagacct tggggccctg aggccaaac	300
tcgggacgaa cccctaacc accctctttt tcctgtcatt ctccaaactct tactttgtac	360
cacgaatca cttggccta aagctagcca gtcggccgt gccttgaggc caggttcgag	420
agataaaggt aaccgtgggg aaagccccc cccagtggac aaaggccggag gcaagaatag	480
agcaggcctg agggccatag gcgatgagaa taggcagttg aggggtgaaa aagaaaaacaa	540
acaacaaca acaacaaacc ctgaagagta ctgaagattt agaaggact ggaaaggact	600
tgttgcgca atg gaa gaa tct gac tct gag aaa acg acg gag aaa gaa Met Glu Ser Asp Ser Glu Lys Thr Thr Glu Lys Glu	648
1 5 10	
aat ctg ggg ccg aga atg gat cca cca cta ggg gaa ccg gaa gga tcg Asn Leu Gly Pro Arg Met Asp Pro Leu Gly Glu Pro Glu Gly Ser	696
15 20 25	
ctt ggg tgg gtg cta cca aat aca gcc atg aag aaa aag gta aga cgt Leu Gly Trp Val Leu Pro Asn Thr Ala Met Lys Lys Lys Val Arg Arg	744
30 35 40 45	
gtt aga tac gtc aaa acc atg aag aaa aag gtg ctg ttg atg ggt aaa Val Arg Tyr Val Lys Thr Met Lys Lys Val Leu Leu Met Gly Lys	792
50 55 60	
agt ggg tct ggt aag acc agc atg agg tct att atc ttt gca aat tat Ser Gly Ser Gly Lys Thr Ser Met Arg Ser Ile Ile Phe Ala Asn Tyr	840
65 70 75	
att gcc aga gac aca cgt cgc ctt ggc gca aca ata cta gac cgt ata Ile Ala Arg Asp Thr Arg Arg Leu Gly Ala Thr Ile Leu Asp Arg Ile	888
80 85 90	
cat agt ctt caa att aat agc agt ttg agc acc tac tct ctc gta gac His Ser Leu Gln Ile Asn Ser Ser Leu Ser Thr Tyr Ser Leu Val Asp	936
95 100 105	
tct gtt gga aat aca aag aca ttt gat gta gaa cat tct cat gtt cga Ser Val Gly Asn Thr Lys Thr Phe Asp Val Glu His Ser His Val Arg	984
110 115 120 125	
ttt ctg gga aac ctg gta ttg aac ctg tgg gat tgt ggt ggg caa gac Phe Leu Gly Asn Leu Val Leu Asn Leu Trp Asp Cys Gly Gln Asp	1032
130 135 140	
acc ttc atg gaa aat tat ttc act agc caa cgg gac aac atc ttc cga Thr Phe Met Glu Asn Tyr Phe Thr Ser Gln Arg Asp Asn Ile Phe Arg	1080
145 150 155	
aat gtg gag gtt ctg att tat gtc ttt gat gtg gag agc cgc gaa ctg Asn Val Glu Val Leu Ile Tyr Val Phe Asp Val Glu Ser Arg Glu Leu	1128

160	165	170	
gaa aag gac atg cac tat tac caa tca tgc ctg gag gcc att ctg cag Glu Lys Asp Met His Tyr Tyr Gln Ser Cys Leu Glu Ala Ile Leu Gln 175 180 185			1176
aat tct cca gat gcc aaa ata ttt tgc ttg gta cac aaa atg gat ctg Asn Ser Pro Asp Ala Lys Ile Phe Cys Leu Val His Lys Met Asp Leu 190 195 200 205			1224
gta cag gag gat caa cgg gac ctg att ttt aaa gag cga gaa gaa gat Val Gln Glu Asp Gln Arg Asp Leu Ile Phe Lys Glu Arg Glu Glu Asp 210 215 220			1272
ttg agg cgt ttg tct cgc cca ttg gaa tgt tct tgt ttc cga aca tct Leu Arg Arg Leu Ser Arg Pro Leu Glu Cys Ser Cys Phe Arg Thr Ser 225 230 235			1320
atc tgg gat gaa acc ctc tat aag gct tgg tcc agc ata gtt tat cag Ile Trp Asp Glu Thr Leu Tyr Lys Ala Trp Ser Ser Ile Val Tyr Gln 240 245 250			1368
ctg att ccc aat gtt cag cag ctg gaa atg aac cta agg aat ttt gct Leu Ile Pro Asn Val Gln Gln Leu Glu Met Asn Leu Arg Asn Phe Ala 255 260 265			1416
gaa att atc gaa gct gat gaa gta ctt ctt ttt gag aga gct act ttt Glu Ile Ile Glu Ala Asp Glu Val Leu Leu Phe Glu Arg Ala Thr Phe 270 275 280 285			1464
ctg gta att tct cac tat cag tgt aaa gag cag cgt gat gcc cat aga Leu Val Ile Ser His Tyr Gln Cys Lys Glu Gln Arg Asp Ala His Arg 290 295 300			1512
ttt gag aaa ata agc aac att att aag cag ttc aag ctg agc tgc agc Phe Glu Lys Ile Ser Asn Ile Ile Lys Gln Phe Lys Leu Ser Cys Ser 305 310 315			1560
aag ctg gct gcc tct ttc cag agt atg gaa gtc agg aac tct aac ttc Lys Leu Ala Ala Ser Phe Gln Ser Met Glu Val Arg Asn Ser Asn Phe 320 325 330			1608
gct gct ttc att gac atc ttt aca tcc aac act tat gtg atg gtt gtg Ala Ala Phe Ile Asp Ile Phe Thr Ser Asn Thr Tyr Val Met Val Val 335 340 345			1656
atg tct gat ccg tcc att cct tct gca gct act ctg atc aac atc cgc Met Ser Asp Pro Ser Ile Pro Ser Ala Ala Thr Leu Ile Asn Ile Arg 350 355 360 365			1704
aat gcc agg aaa cac ttt gaa aag ctg gaa aga gtg gat gga cca aag Asn Ala Arg Lys His Phe Glu Lys Leu Glu Arg Val Asp Gly Pro Lys 370 375 380			1752
cag tgt ctt ctc atg cgc taa ac attgatgaat attgtttcac acaaaaatta Gln Cys Leu Leu Met Arg *385			1805
aaagtttcct aattatgtt gtattcatat atgtaggctc tgaaatgttg tgatgcttat			1865
tgcttcgtta ttcttcctct actccctagt cttaatgttt aaccttgaat gctattaact			1925
taaatagcca ttgaggagtt agaagatgaa ttgttcatga agtcgggttt acataaaaagt			1985

aggtgatatg taagtttct gataacaagg ttctaatagt gtttaaatgt actggtaacc 2045  
 tggttccaat agttgtgtt gcccaaggct ttctcggcat catcttgtat tccttatcag 2105  
 atagtaagta acctgtaagt ttggagtatt actgtttct cagcatgcat taaaaatatt 2165  
 ccttaacttc aaaaaaaaaaaa aaa 2188

<210> 495  
 <211> 7818  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (61)...(2931)

<400> 495  
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 atg gcc agc aag agg aaa tcc acc aca cca tgc atg atc cca gtg aag 108  
 Met Ala Ser Lys Arg Lys Ser Thr Thr Pro Cys Met Ile Pro Val Lys  
 1 5 10 15  
 act gtg gtg ttg caa gat gcc agc atg gag gcc cag ccc gct gag acc 156  
 Thr Val Val Leu Gln Asp Ala Ser Met Glu Ala Gln Pro Ala Glu Thr  
 20 25 30  
 ttg cct gaa gga ccc cag cag gat ctg ccc cca gaa gca tct gct gcc 204  
 Leu Pro Glu Gly Pro Gln Gln Asp Leu Pro Pro Glu Ala Ser Ala Ala  
 35 40 45  
 agc agt gag gca gca cag aac ccc agc agt act gat ggc tct aca ctg 252  
 Ser Ser Glu Ala Ala Gln Asn Pro Ser Ser Thr Asp Gly Ser Thr Leu  
 50 55 60  
 gcc aat ggg cat cgg agc act tta gat ggc tat tta tat tcc tgt aaa 300  
 Ala Asn Gly His Arg Ser Thr Leu Asp Gly Tyr Leu Tyr Ser Cys Lys  
 65 70 75 80  
 tac tgc gat ttc aga tcc cat gac atg acc caa ttt gtg gga cat atg 348  
 Tyr Cys Asp Phe Arg Ser His Asp Met Thr Gln Phe Val Gly His Met  
 85 90 95  
 aac tca gag cac aca gac ttt aat aaa gac cca acc ttt gta tgc agt 396  
 Asn Ser Glu His Thr Asp Phe Asn Lys Asp Pro Thr Phe Val Cys Ser  
 100 105 110  
 ggg tgc agt ttt ctg gca aaa acc cct gag ggg ctt tcc ttg cac aat 444  
 Gly Cys Ser Phe Leu Ala Lys Thr Pro Glu Gly Leu Ser Leu His Asn  
 115 120 125  
 gcc aca tgt cac tcc ggg gaa gcc agc ttt gtg tgg aac gtg gcc aag 492  
 Ala Thr Cys His Ser Gly Glu Ala Ser Phe Val Trp Asn Val Ala Lys  
 130 135 140  
 cca gac aat cat gtg gtt gtg gag cag agc atc cct gag agc acc agc 540  
 Pro Asp Asn His Val Val Val Glu Gln Ser Ile Pro Glu Ser Thr Ser  
 145 150 155 160  
 act cct gac cta gcg ggt gag ccc agt gct gaa ggg gct gat gga cag 588

Thr Pro Asp Leu Ala Gly Glu Pro Ser Ala Glu Gly Ala Asp Gly Gln		
165	170	175
gca gaa atc atc att acc aaa act cca atc atg aag ata atg aaa ggc		636
Ala Glu Ile Ile Ile Thr Lys Thr Pro Ile Met Lys Ile Met Lys Gly		
180	185	190
aaa gct gaa gcc aaa aaa att cat aca ctc aag gag aat gtc cct agc		684
Lys Ala Glu Ala Lys Lys Ile His Thr Leu Lys Glu Asn Val Pro Ser		
195	200	205
cag cct gtg ggt gag gcc tta cca aag ctg tcg act gga gaa atg gag		732
Gln Pro Val Gly Glu Ala Leu Pro Lys Leu Ser Thr Gly Glu Met Glu		
210	215	220
gtg aga gag ggg gac cat tcc ttc atc aat ggg gca gtt cca gtc agc		780
Val Arg Glu Gly Asp His Ser Phe Ile Asn Gly Ala Val Pro Val Ser		
225	230	235
cag gca tct gcc agc tct gca aaa aac ccc cat gcc gcc aac ggg ccc		828
Gln Ala Ser Ala Ser Ala Lys Asn Pro His Ala Ala Asn Gly Pro		
245	250	255
ctg ata gga aca gtg cca gtt ttg cca gct ggc ata gca cag ttc ctc		876
Leu Ile Gly Thr Val Pro Val Leu Pro Ala Gly Ile Ala Gln Phe Leu		
260	265	270
tcc ctc cag cag ccc cca gtg cat gcc caa cac cat gtc cac cag		924
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Ser Ile Pro Thr Tyr Ser Ala Ala Met Asp Ser Asn Ser Phe Leu Lys		
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Gln Pro Thr Ile Thr Val Leu Asn Thr Pro Leu Val Ala Ser Ala Gly		
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Gln Pro Glu Gly Thr Gly Gly Leu Leu Val Thr Gln Pro Leu Met		
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Ser Val Pro Lys Gln Pro Gly Val Ala Pro Ile Asn Thr Val Cys Ser		
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tattcctgat ccaaaggcagc tgcca atg cct cag acg cct gtg ccc cca gag	172
Met Pro Gln Thr Pro Val Pro Pro Glu	
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ggc cag ggg cag ctg ccg cgc agg gcg ggg agc cgg gag gcg gtg ccg	220
Gly Gln Gly Gln Leu Pro Arg Arg Ala Gly Ser Arg Glu Ala Val Pro	
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Ala Pro Ala Ser Ala Pro Glu Ala Ala Pro Gly Ser Ala Arg Pro Gly	
30 35 40	
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Arg Ser Arg His Val Thr Gly Ala Ala Arg Ser Pro Ser Arg Ala Gly	
45 50 55	
ccc agc gac ccg ccc gcc atg ggg gac gag gac gac gat gag agc tgc	364
Pro Ser Asp Pro Pro Ala Met Gly Asp Glu Asp Asp Glu Ser Cys	

60	65	70	
gcc gtg gag ctg cgg atc aca gaa gcc aac ctg acc ggg cac gag gag Ala Val Glu Leu Arg Ile Thr Glu Ala Asn Leu Thr Gly His Glu Glu 75	80	85	412
aag gtg agc gtg gag aac ttc gag ctg ctc aag gtg ctg ggc acg gga Lys Val Ser Val Glu Asn Phe Glu Leu Leu Lys Val Leu Gly Thr Gly 90	95	100	105
gcc tac ggc aag gtg ttc ctg gtg cgg aag gcg ggc ggg cac gac gcg Ala Tyr Gly Lys Val Phe Leu Val Arg Lys Ala Gly Gly His Asp Ala 110	115	120	508
ggg aag ctg tac gcc atg aag gtg ctg cgc aag gcg gcg ctg gtg cag Gly Lys Leu Tyr Ala Met Lys Val Leu Arg Lys Ala Ala Leu Val Gln 125	130	135	556
cgc gcc aag acg cag gag cac acg cgc acc gag cgc tcg gtg ctg gag Arg Ala Lys Thr Gln Glu His Thr Arg Thr Glu Arg Ser Val Leu Glu 140	145	150	604
ctg gtg cgc cag gcg ccc ttc ctg gtc acg ctg cac tac gct ttc cag Leu Val Arg Gln Ala Pro Phe Leu Val Thr Leu His Tyr Ala Phe Gln 155	160	165	652
acg gat gcc aag ctg cac ctc atc ctg gac tat gtg agc ggc ggg gag Thr Asp Ala Lys Leu His Leu Ile Leu Asp Tyr Val Ser Gly Gly Glu 170	175	180	700
atg ttc acc cac ctc tac cag cgc cag tac ttc aag gag gct gag gtg Met Phe Thr His Leu Tyr Gln Arg Gln Tyr Phe Lys Glu Ala Glu Val 190	195	200	748
cgc gtg tat ggg ggt gag atc gtg ctg gcc ctg gaa cac ctg cac aag Arg Val Tyr Gly Glu Ile Val Leu Ala Leu Glu His Leu His Lys 205	210	215	796
ctc ggc atc att tac cga gac ctg aaa ctg gag aat gtg ctg ctg gac Leu Gly Ile Ile Tyr Arg Asp Leu Lys Leu Glu Asn Val Leu Leu Asp 220	225	230	844
tcc gag ggc cac att gtc ctc acg gac ttc ggg ctg agc aag gag ttc Ser Glu Gly His Ile Val Leu Thr Asp Phe Gly Leu Ser Lys Glu Phe 235	240	245	892
ctg acg gag gag aaa gag cgg acc ttc tcc ttc tgt ggc acc atc gag Leu Thr Glu Glu Lys Glu Arg Thr Phe Ser Phe Cys Gly Thr Ile Glu 250	255	260	940
tac atg gcc ccc gaa atc atc cgt agc aag acg ggg cat ggc aag gct Tyr Met Ala Pro Glu Ile Ile Arg Ser Lys Thr Gly His Gly Lys Ala 270	275	280	988
gtg gac tgg tgg agc ctg ggc atc ttg ctc ttc gag ctg ctg acg ggg Val Asp Trp Trp Ser Leu Gly Ile Leu Leu Phe Glu Leu Leu Thr Gly 285	290	295	1036
gcc tcg ccc ttc acc ctg gag ggc gag agg aac acg cag gct gag gtg Ala Ser Pro Phe Thr Leu Glu Gly Glu Arg Asn Thr Gln Ala Glu Val 300	305	310	1084
tct cga cgg atc ctg aag tgc tcc cct ccc ttc ccc cct cgg atc ggg Ser Arg Arg Ile Leu Lys Cys Ser Pro Pro Phe Pro Pro Arg Ile Gly			1132

315	320	325	
ccc gtg gcg cag gac ctg ctg cag cggtt tgt aag gat cct aag Pro Val Ala Gln Asp Leu Leu Gln Arg Leu Leu Cys Lys Asp Pro Lys	330	335	1180
330	335	340	345
aag cga ttg ggc gcg ggg ccc cag ggg gca caa gaa gtc cggtt aac cat Lys Arg Leu Gly Ala Gly Pro Gln Gly Ala Gln Glu Val Arg Asn His	350	355	1228
350	355	360	
ccc ttc ttc cag ggc ctc gat tgg gtg gct ctg gct gcc agg aag att Pro Phe Phe Gln Gly Leu Asp Trp Val Ala Leu Ala Arg Lys Ile	365	370	1276
365	370	375	
cca gcc cca ttc cgg ccc caa atc cgc tca gag ctg gat gtg ggc aac Pro Ala Pro Phe Arg Pro Gln Ile Arg Ser Glu Leu Asp Val Gly Asn	380	385	1324
380	385	390	
ttt gcg gag gaa ttc act cgg ctg gag cct gtc tac tca ccc cct ggc Phe Ala Glu Glu Phe Thr Arg Leu Glu Pro Val Tyr Ser Pro Pro Gly	395	400	1372
395	400	405	
agc ccc cca cct ggg gac ccc cga atc ttt cag gga tac tcc ttt gtg Ser Pro Pro Pro Gly Asp Pro Arg Ile Phe Gln Gly Tyr Ser Phe Val	410	415	1420
410	415	420	
425			
gca ccc tcc att ctc ttt gac cac aac aac gcg gtg atg acc gat ggg Ala Pro Ser Ile Leu Phe Asp His Asn Asn Ala Val Met Thr Asp Gly	430	435	1468
430	435	440	
ctg gaa gcg cct ggt gct gga gac cgg cca ggt cgg gca gcg gtg gcc Leu Glu Ala Pro Gly Ala Gly Asp Arg Pro Gly Arg Ala Ala Val Ala	445	450	1516
445	450	455	
agg agc gct atg atg cag gac tcg ccc ttc ttc cag cag tac gag ctg Arg Ser Ala Met Met Gln Asp Ser Pro Phe Phe Gln Gln Tyr Glu Leu	460	465	1564
460	465	470	
gac ctg cgg gag cct gcg ctg ggc cag ggc agc ttt tct gtg tgt cgc Asp Leu Arg Glu Pro Ala Leu Gly Gln Gly Ser Phe Ser Val Cys Arg	475	480	1612
475	480	485	
cgc tgc cgc cag cgc cag agc ggc cag gag ttc gca gtc aag atc ctc Arg Cys Arg Gln Arg Gln Ser Gly Gln Glu Phe Ala Val Lys Ile Leu	490	495	1660
490	495	500	
505			
agt cgc agg ctg gag gcg aac acg cag cgc gaa gtg gct gcc ctg cgc Ser Arg Arg Leu Glu Ala Asn Thr Gln Arg Glu Val Ala Ala Leu Arg	510	515	1708
510	515	520	
ctg tgc cag tca cac ccc aac gtg gtg aat ctg cac gag gtg cat cac Leu Cys Gln Ser His Pro Asn Val Val Asn Leu His Glu Val His His	525	530	1756
525	530	535	
gac cag ctg cac acg tac ctg gtc ctg gag ctg ctg cgg ggc ggg gag Asp Gln Leu His Thr Tyr Leu Val Leu Glu Leu Leu Arg Gly Gly Glu	540	545	1804
540	545	550	
ctg ctg gag cac atc cgc aag aag cgg cac ttc agc gag tcg gaa gca Leu Leu Glu His Ile Arg Lys Lys Arg His Phe Ser Glu Ser Glu Ala	555	560	1852
555	560	565	
agc cag atc ctg cgc agc ctc gtg tcg gcc gtg agc ttc atg cac gag Ser Gln Ile Leu Arg Ser Leu Val Ser Ala Val Ser Phe Met His Glu	570	575	1900

570	575	580	585	
gag ggc ggc gtg gtg cac cgc gac ctc aag ccg gag aac atc ctg tac Glu Ala Gly Val Val His Arg Asp Leu Lys Pro Glu Asn Ile Leu Tyr				1948
590	595	600		
gcc gac gac acg ccc ggg gcc ccg gtg aaa atc atc gac ttc ggg ttc Ala Asp Asp Thr Pro Gly Ala Pro Val Lys Ile Ile Asp Phe Gly Phe				1996
605	610	615		
gcg cgg ttg cgg ccc cag agt ccc ggg gtg ccc atg cag acg ccc tgc Ala Arg Leu Arg Pro Gln Ser Pro Gly Val Pro Met Gln Thr Pro Cys				2044
620	625	630		
ttc acg ctg cag tac gct gcc ccc gag ctg ctg ggc cag cag ggc tac Phe Thr Leu Gln Tyr Ala Ala Pro Glu Leu Leu Ala Gln Gln Gly Tyr				2092
635	640	645		
gac gag tcc tgc gac ctc tgg agc ctg ggc gtc att ctg tac atg atg Asp Glu Ser Cys Asp Leu Trp Ser Leu Gly Val Ile Leu Tyr Met Met				2140
650	655	660	665	
ctg tcg ggg cag gtc ccc ttc cag ggg gcc tct ggc cag ggc ggg cag Leu Ser Gly Gln Val Pro Phe Gln Gly Ala Ser Gly Gln Gly Gln				2188
670	675	680		
agc cag gcg gcc gag atc atg tgc aaa atc cgc gag ggg cgc ttc tcc Ser Gln Ala Ala Glu Ile Met Cys Lys Ile Arg Glu Gly Arg Phe Ser				2236
685	690	695		
ctt gac ggg gag gcc tgg cag ggt gta tcc gag gaa gcc aag gag ctg Leu Asp Gly Glu Ala Trp Gln Gly Val Ser Glu Glu Ala Lys Glu Leu				2284
700	705	710		
gtc cga ggg ctc ctg acc gtg gac ccc gcc aag cgg ctg aag ctc gag Val Arg Gly Leu Leu Thr Val Asp Pro Ala Lys Arg Leu Lys Leu Glu				2332
715	720	725		
gga ctg cgg ggc agc tcg tgg ctg cag gac ggc agc gcg cgc tcc tcg Gly Leu Arg Gly Ser Ser Trp Leu Gln Asp Gly Ser Ala Arg Ser Ser				2380
730	735	740	745	
ccc ccg ctc cgg acg ccc gac gtg ctc gag tcc tct ggg ccc gca gtg Pro Pro Leu Arg Thr Pro Asp Val Leu Glu Ser Ser Gly Pro Ala Val				2428
750	755	760		
cgc tcg ggt ctc aac gcc acc ttc atg gca ttc aac cgg ggc aag cgg Arg Ser Gly Leu Asn Ala Thr Phe Met Ala Phe Asn Arg Gly Lys Arg				2476
765	770	775		
gag ggc ttc ttc ctg aag agc gtg gag aac gca ccc ctg gcc aag cgg Glu Gly Phe Phe Leu Lys Ser Val Glu Asn Ala Pro Leu Ala Lys Arg				2524
780	785	790		
cgx aag cag aag ctg cgg agc gcc acc gcc tcc cgc cgg ggc tcc cct Arg Lys Gln Lys Leu Arg Ser Ala Thr Ala Ser Arg Arg Gly Ser Pro				2572
795	800	805		
gca cca gcc aac ccg ggc cga gcc ccc gtc gcc tcc aaa ggg gcc ccc Ala Pro Ala Asn Pro Gly Arg Ala Pro Val Ala Ser Lys Gly Ala Pro				2620
810	815	820	825	
cgc cga gcc aac ggc ccc ctg ccc tcc taa tccccacc actgtgaccc Arg Arg Ala Asn Gly Pro Leu Pro Pro Ser *				2671

830

835

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aaaaaaaaaa	3400

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gcggccatag agaatgaact gtgttgtgt ttagagaaga cacactcccc acccctgaac	180		
aggcttctta aaagtacttag aaaggaacag aa atg aat aaa agt cgc tgg cag	233		
Met Asn Lys Ser Arg Trp Gln			
1	5		
agt aga aga cga cat ggg aga aga agc cac cag cag aac cct tgg ttc	281		
Ser Arg Arg Arg His Gly Arg Arg Ser His Gln Gln Asn Pro Trp Phe			
10	15	20	
aga ctc cgt gat tct gaa gac agg tct gac tcc cgg gca gca cag ccc	329		
Arg Leu Arg Asp Ser Glu Asp Arg Ser Asp Ser Arg Ala Ala Gln Pro			
25	30	35	
gct cac gat tcc ggc cac ggt gat gac gag tct ccg tca acc tcg tct	377		
Ala His Asp Ser Gly His Gly Asp Asp Glu Ser Pro Ser Thr Ser Ser			
40	45	50	55
ggc aca gct ggg acc tcc tct gtg cca gag cta cct ggg ttt tac ttt	425		

Gly Thr Ala Gly Thr Ser Ser Val Pro Glu Leu Pro Gly Phe Tyr Phe			
60	65	70	
gac cct gaa aag aaa cgc tac ttc cgc ttg ctc cct gga cat aac aac			473
Asp Pro Glu Lys Lys Arg Tyr Phe Arg Leu Leu Pro Gly His Asn Asn			
75	80	85	
tgc aac ccc ctg acg aaa gag agc atc cgg cag aag gag atg gag agc			521
Cys Asn Pro Leu Thr Lys Glu Ser Ile Arg Gln Lys Glu Met Glu Ser			
90	95	100	
aag aga ctg cgg ctg ctc cag gaa gaa gac aga cgg aaa aag att gcc			569
Lys Arg Leu Arg Leu Leu Gln Glu Asp Arg Arg Lys Lys Ile Ala			
105	110	115	
agg atg gga ttt aat gca tct tcc atg cta cga aaa agc cag ctg ggt			617
Arg Met Gly Phe Asn Ala Ser Ser Met Leu Arg Lys Ser Gln Leu Gly			
120	125	130	135
ttt ctc aac gtc acc aat tac tgc cat tta gcc cac gag ctg cgt ctc			665
Phe Leu Asn Val Thr Asn Tyr Cys His Leu Ala His Glu Leu Arg Leu			
140	145	150	
agc tgc atg gag agg aaa aag gtc cag att cga agc atg gat ccc tcc			713
Ser Cys Met Glu Arg Lys Lys Val Gln Ile Arg Ser Met Asp Pro Ser			
155	160	165	
gcc ttg gca agc gac cga ttt aac ctc ata ctg gca gat acc aac agt			761
Ala Leu Ala Ser Asp Arg Phe Asn Leu Ile Leu Ala Asp Thr Asn Ser			
170	175	180	
gac cgg ctc ttc aca gtg aac gat gtt aca gtt gga ggc tcc aag tat			809
Asp Arg Leu Phe Thr Val Asn Asp Val Thr Val Gly Gly Ser Lys Tyr			
185	190	195	
ggc atc atc aac ctg caa agt ctg aag acc cct acg ctc aag gtg ttc			857
Gly Ile Ile Asn Leu Gln Ser Leu Lys Thr Pro Thr Leu Lys Val Phe			
200	205	210	215
atg cac gaa aac ctc tac ttc acc aac cgg aag gtg aat tcg gtg tgc			905
Met His Glu Asn Leu Tyr Phe Thr Asn Arg Lys Val Asn Ser Val Cys			
220	225	230	
tgg gcc tcc ctg aat cac ttg gat tcc cac att ctg cta tgc ctc atg			953
Trp Ala Ser Leu Asn His Leu Asp Ser His Ile Leu Leu Cys Leu Met			
235	240	245	
gga ctc gca gag act cca ggc tgt gcc acc ctg ctc cca gca tca ctg			1001
Gly Leu Ala Glu Thr Pro Gly Cys Ala Thr Leu Leu Pro Ala Ser Leu			
250	255	260	
ttc gtc aat agt cac cca gga ata gac cgg cct ggc atg ctc tgc agt			1049
Phe Val Asn Ser His Pro Gly Ile Asp Arg Pro Gly Met Leu Cys Ser			
265	270	275	
ttc cgg atc cct ggt gcc tgg tcc tgt gcc tgg tcc ctg aat atc caa			1097
Phe Arg Ile Pro Gly Ala Trp Ser Cys Ala Trp Ser Leu Asn Ile Gln			
280	285	290	295
gca aat aac tgc ttc agt aca ggc ttg tct cgg cgg gtc ctg ttg acc			1145
Ala Asn Asn Cys Phe Ser Thr Gly Leu Ser Arg Arg Val Leu Leu Thr			
300	305	310	
aac gtg gtg acg gga cac cgg cag tcc ttt ggg acc aac agt gat gtc			1193

Asn Val Val Thr Gly His Arg Gln Ser Phe Gly Thr Asn Ser Asp Val		
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Leu Ala Gln Gln Phe Ala Phe Met Ala Pro Leu Leu Phe Asn Gly Cys		
330	335	340
cgc tct ggg gaa atc ttt gcc att gat ctg cgt tgt gga aat caa ggc		1289
Arg Ser Gly Glu Ile Phe Ala Ile Asp Leu Arg Cys Gly Asn Gln Gly		
345	350	355
aag gga tgg aag gcc acc cgc ctg ttt cat gat tca gca gtg acc tct		1337
Lys Gly Trp Lys Ala Thr Arg Leu Phe His Asp Ser Ala Val Thr Ser		
360	365	370
375		
gtg cgg atc ctccaa gat gag caa tac ctg atg gct tca gac atg gct		1385
Val Arg Ile Leu Gln Asp Glu Gln Tyr Leu Met Ala Ser Asp Met Ala		
380	385	390
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Gly Lys Ile Lys Leu Trp Asp Leu Arg Thr Thr Lys Cys Val Arg Gln		
395	400	405
tac gaa ggc cac gtg aat gag tac gcc tac ctg ccc ctg cat gtg cac		1481
Tyr Glu Gly His Val Asn Glu Tyr Ala Tyr Leu Pro Leu His Val His		
410	415	420
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Glu Glu Glu Ile Leu Val Ala Gly Thr *		
425	430	
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Leu Ala Leu Trp Ile Thr Leu Ser Leu Leu Gln Thr Gly Leu Ala Glu		
10 15 20		
cca gag aga tgt aac ttc acc ctg gcg gag tcc aag gcc tcc agc cat		147
Pro Glu Arg Cys Asn Phe Thr Leu Ala Glu Ser Lys Ala Ser Ser His		
25 30 35		
tct gtg tct atc cag tgg aga att ttg ggc tca ccc tgt aac ttt agc		195
Ser Val Ser Ile Gln Trp Arg Ile Leu Gly Ser Pro Cys Asn Phe Ser		
40 45 50 55		
ctc atc tat agc agt gac acc ctg ggg gcc gcg ttg tgc cct acc ttt		243
Leu Ile Tyr Ser Ser Asp Thr Leu Gly Ala Ala Leu Cys Pro Thr Phe		
60 65 70		
cgg ata gac aac acc aca tac gga tgt aac ctt caa gat tta caa gca		291
Arg Ile Asp Asn Thr Thr Tyr Gly Cys Asn Leu Gln Asp Leu Gln Ala		
75 80 85		
gga acc atc tat aac ttc aag att att tct ctg gat gaa gag aga act		339
Gly Thr Ile Tyr Asn Phe Lys Ile Ile Ser Leu Asp Glu Glu Arg Thr		
90 95 100		
gtg gtc ttg caa aca gat cct tta cct gct agg ttt gga gtc agt		387
Val Val Leu Gln Thr Asp Pro Leu Pro Pro Ala Arg Phe Gly Val Ser		

105	110	115	
aaa gag aag acg act tca acc ggc ttg cat gtt tgg tgg act cct tct Lys Glu Lys Thr Thr Ser Thr Gly Leu His Val Trp Trp Thr Pro Ser	120	125	435
tcc gga aaa gtc acc tca tat gag gtg caa tta ttt gat gaa aat aac Ser Gly Lys Val Thr Ser Tyr Glu Val Gln Leu Phe Asp Glu Asn Asn	140	145	483
caa aag ata cag ggg gtt caa att caa gaa agt act tca tgg aat gaa Gln Lys Ile Gln Gly Val Gln Ile Gln Glu Ser Thr Ser Trp Asn Glu	155	160	531
tac act ttt ttc aat ctc act gct ggt agt aaa tac aat att gcc atc Tyr Thr Phe Phe Asn Leu Thr Ala Gly Ser Lys Tyr Asn Ile Ala Ile	170	175	579
aca gct gtt tct gga gga aaa cgt tct ttt tca gtt tat acc aat gga Thr Ala Val Ser Gly Gly Lys Arg Ser Phe Ser Val Tyr Thr Asn Gly	185	190	627
tca aca gtg cca tct cca gtg aaa gat att ggt att tcc aca aaa gcc Ser Thr Val Pro Ser Pro Val Lys Asp Ile Gly Ile Ser Thr Lys Ala	200	205	675
aat tct ctc ctg att tcc tgg tcc cat ggt tct ggg aat gtg gaa cga Asn Ser Leu Leu Ile Ser Trp Ser His Gly Ser Gly Asn Val Glu Arg	220	225	723
tac cgg ctg atg cta atg gat aaa ggg atc cta gtt cat ggc ggt gtt Tyr Arg Leu Met Leu Met Asp Lys Gly Ile Leu Val His Gly Gly Val	235	240	771
gtg gac aaa cat gct act tcc tat gct ttt cac ggg ctg tcc cct ggc Val Asp Lys His Ala Thr Ser Tyr Ala Phe His Gly Leu Ser Pro Gly	250	255	819
tac ctc tac aac ctc act gtt atg act gag gct gca ggg ctg caa aac Tyr Leu Tyr Asn Leu Thr Val Met Thr Glu Ala Ala Gly Leu Gln Asn	265	270	867
tac agg tgg aaa cta gtc agg aca gcc ccc atg gaa gtc tca aat ctg Tyr Arg Trp Lys Leu Val Arg Thr Ala Pro Met Glu Val Ser Asn Leu	280	285	915
aag gtg aca aat gat ggc agt ttg acc tct cta aaa gtc aaa tgg caa Lys Val Thr Asn Asp Gly Ser Leu Thr Ser Leu Lys Val Lys Trp Gln	300	305	963
aga cct cct gga aat gtg gat tct tac aat atc acc ctg tct cac aaa Arg Pro Pro Gly Asn Val Asp Ser Tyr Asn Ile Thr Leu Ser His Lys	315	320	1011
ggg acc atc aag gaa tcc aga gta tta gca cct tgg att act gaa act Gly Thr Ile Lys Glu Ser Arg Val Leu Ala Pro Trp Ile Thr Glu Thr	330	335	1059
cac ttt aaa gag tta gtc ccc ggt cga ctt tat caa gtt act gtc agc His Phe Lys Glu Leu Val Pro Gly Arg Leu Tyr Gln Val Thr Val Ser	345	350	1107
tgt gtc tct ggt gaa ctg tct gct cag aag atg gca gtg ggc aga aca Cys Val Ser Gly Glu Leu Ser Ala Gln Lys Met Ala Val Gly Arg Thr			1155

360	365	370	375	
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380	385	390		
agg tct ctt gta gtg agc tgg tcg ccc cct gct gga gac tgg gag cag Arg Ser Leu Val Val Ser Trp Ser Pro Pro Ala Gly Asp Trp Glu Gln				1251
395	400	405		
tat cgg atc cta ctc ttc aat gat tct gtg gtg ctg ctc aac atc act Tyr Arg Ile Leu Leu Phe Asn Asp Ser Val Val Leu Leu Asn Ile Thr				1299
410	415	420		
gtg gga aag gaa gaa aca cag tat gtc atg gat ggc acg ggg ctc gta Val Gly Lys Glu Glu Thr Gln Tyr Val Met Asp Gly Thr Gly Leu Val				1347
425	430	435		
ccg gga aga cag tat gag gtg gaa gtc att gtt gag agt gga aat ttg Pro Gly Arg Gln Tyr Glu Val Glu Val Ile Val Glu Ser Gly Asn Leu				1395
440	445	450	455	
aag aat tct gag cgt tgc caa ggc agg aca gtc ccc ctg gct gtc ctc Lys Asn Ser Glu Arg Cys Gln Gly Arg Thr Val Pro Leu Ala Val Leu				1443
460	465	470		
cag ctt cgt gtc aaa cat gcc aat gaa acc tca ctg agt atc atg tgg Gln Leu Arg Val Lys His Ala Asn Glu Thr Ser Leu Ser Ile Met Trp				1491
475	480	485		
cag acc cct gta gca gaa tgg gag aaa tac atc att tcc cta gct gac Gln Thr Pro Val Ala Glu Trp Glu Lys Tyr Ile Ile Ser Leu Ala Asp				1539
490	495	500		
aga gac ctc tta ctg atc cac aag tca ctc tcc aaa gat gcc aaa gaa Arg Asp Leu Leu Leu Ile His Lys Ser Leu Ser Lys Asp Ala Lys Glu				1587
505	510	515		
ttc act ttt act gac ctg gtg cct gga cga aaa tac atg gct aca gtc Phe Thr Phe Thr Asp Leu Val Pro Gly Arg Lys Tyr Met Ala Thr Val				1635
520	525	530	535	
acc agt att agt gga gac tta aaa aat tcc tct tca gta aaa gga aga Thr Ser Ile Ser Gly Asp Leu Lys Asn Ser Ser Val Lys Gly Arg				1683
540	545	550		
aca gtg cct gcc caa gtg act gac ttg cat gtg gcc aac caa gga atg Thr Val Pro Ala Gln Val Thr Asp Leu His Val Ala Asn Gln Gly Met				1731
555	560	565		
acc agt agt ctg ttt act aac tgg acc cag gca caa gga gac gta gaa Thr Ser Ser Leu Phe Thr Asn Trp Thr Gln Ala Gln Gly Asp Val Glu				1779
570	575	580		
ttt tac caa gtc tta ctg atc cat gaa aat gtg gtc att aaa aat gaa Phe Tyr Gln Val Leu Leu Ile His Glu Asn Val Val Ile Lys Asn Glu				1827
585	590	595		
agc atc tcc agt gag acc agc aga tac agc ttc cac tct ctc aag tcc Ser Ile Ser Ser Glu Thr Ser Arg Tyr Ser Phe His Ser Leu Lys Ser				1875
600	605	610	615	
ggc agc ctg tac tcc gtg gtg gta aca aca gtg agt gga ggg atc tct Gly Ser Leu Tyr Ser Val Val Val Thr Thr Val Ser Gly Gly Ile Ser				1923

620

625

630

tcc cga caa gtg gtt gtg gag gga aga aca gtc cct tcc agt gtg agt Ser Arg Gln Val Val Val Glu Gly Arg Thr Val Pro Ser Ser Val Ser 635 640 645	1971
gga gta acg gtg aac aat tcc ggt cgt aat gac tac ctc agc gtt tcc Gly Val Thr Val Asn Asn Ser Gly Arg Asn Asp Tyr Leu Ser Val Ser 650 655 660	2019
tgg ctg ctg gcg ccc gga gat gtg gat aac tat gag gta aca ttg tct Trp Leu Leu Ala Pro Gly Asp Val Asp Asn Tyr Glu Val Thr Leu Ser 665 670 675	2067
cat gac ggc aag gtg gtt cag tcc ctt gtc att gcc aag tct gtc aga His Asp Gly Lys Val Val Gln Ser Leu Val Ile Ala Lys Ser Val Arg 680 685 690 695	2115
gaa tgt tcc ttc agc tcc ctc acc cca ggc cgc ctc tac acc gtg acc Glu Cys Ser Phe Ser Ser Leu Thr Pro Gly Arg Leu Tyr Thr Val Thr 700 705 710	2163
ata act aca agg agt ggc aag tat gaa aat cac tcc ttc agc caa gag Ile Thr Thr Arg Ser Gly Lys Tyr Glu Asn His Ser Phe Ser Gln Glu 715 720 725	2211
cgg aca gtg cct gac aaa gtc cag gga gtc agt gtt agc aac tca gcc Arg Thr Val Pro Asp Lys Val Gln Gly Val Ser Val Ser Asn Ser Ala 730 735 740	2259
agg agt gac tat tta agg gta tcc tgg gtg cat gcc act gga gac ttt Arg Ser Asp Tyr Leu Arg Val Ser Trp Val His Ala Thr Gly Asp Phe 745 750 755	2307
gat cac tat gaa gtc acc att aaa aac aaa aac aac ttc att caa act Asp His Tyr Glu Val Thr Ile Lys Asn Lys Asn Asn Phe Ile Gln Thr 760 765 770 775	2355
aaa agc att ccc aag tca gaa aac gaa tgt gta ttt gtt cag cta gtc Lys Ser Ile Pro Lys Ser Glu Asn Glu Cys Val Phe Val Gln Leu Val 780 785 790	2403
cct gga cgg ttg tac agt gtc act gtt act aca aaa agt gga caa tat Pro Gly Arg Leu Tyr Ser Val Thr Val Thr Lys Ser Gly Gln Tyr 795 800 805	2451
gaa gcc aat gaa caa ggg aat ggg aga aca att cca gag cct gtt aag Glu Ala Asn Glu Gln Gly Asn Gly Arg Thr Ile Pro Glu Pro Val Lys 810 815 820	2499
gat cta aca ttg cgc aac agg agc act gag gac ttg cat gtg act tgg Asp Leu Thr Leu Arg Asn Arg Ser Thr Glu Asp Leu His Val Thr Trp 825 830 835	2547
tca gga gct aat ggg gat gtc gac caa tat gag atc cag ctg ctc ttc Ser Gly Ala Asn Gly Asp Val Asp Gln Tyr Glu Ile Gln Leu Leu Phe 840 845 850 855	2595
aat gac atg aaa gta ttt cct ctt cac ctt gta aat acc gca acc Asn Asp Met Lys Val Phe Pro Pro Phe His Leu Val Asn Thr Ala Thr 860 865 870	2643
gag tat cga ttt act tcc cta aca cca ggc cgc caa tac aaa att ctt Glu Tyr Arg Phe Thr Ser Leu Thr Pro Gly Arg Gln Tyr Lys Ile Leu	2691

875	880	885	
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ttc aca gtt cct agt gct gtc aaa aat att cac att tct ccc aat gga Phe Thr Val Pro Ser Ala Val Lys Asn Ile His Ile Ser Pro Asn Gly 905 910 915			2787
gca aca gat agc ctg acg gtg aac tgg act cct ggt ggg gga gac gtt Ala Thr Asp Ser Leu Thr Val Asn Trp Thr Pro Gly Gly Asp Val 920 925 930 935			2835
gat tcc tac acg gtg tcg gca ttc agg cac agt caa aag gtt gac tct Asp Ser Tyr Thr Val Ser Ala Phe Arg His Ser Gln Lys Val Asp Ser 940 945 950			2883
cag act att ccc aag cac gtc ttt gag cac acg ttc cac aga ctg gag Gln Thr Ile Pro Lys His Val Phe Glu His Thr Phe His Arg Leu Glu 955 960 965			2931
gcc ggg gag cag tac cag atc atg att gcc tca gtc agc ggg tcc ctg Ala Gly Glu Gln Tyr Gln Ile Met Ile Ala Ser Val Ser Gly Ser Leu 970 975 980			2979
aag aat cag ata aat gtg gtt ggg cgg aca gtt cca gca tct gtc caa Lys Asn Gln Ile Asn Val Val Gly Arg Thr Val Pro Ala Ser Val Gln 985 990 995			3027
gga gta att gca gac aat gca tac agc agt tat tcc tta ata gta agt Gly Val Ile Ala Asp Asn Ala Tyr Ser Ser Tyr Ser Leu Ile Val Ser 1000 1005 1010 1015			3075
tgg caa aaa gct gct ggt gtg gca gaa aga tat gat atc ctg ctt cta Trp Gln Lys Ala Ala Gly Val Ala Glu Arg Tyr Asp Ile Leu Leu Leu 1020 1025 1030			3123
act gaa aat gga atc ctt ctg cgc aac aca tca gag cca gcc acc act Thr Glu Asn Gly Ile Leu Leu Arg Asn Thr Ser Glu Pro Ala Thr Thr 1035 1040 1045			3171
aag caa cac aaa ttt gaa gat cta aca cca ggc aag aaa tac aag ata Lys Gln His Lys Phe Glu Asp Leu Thr Pro Gly Lys Lys Tyr Lys Ile 1050 1055 1060			3219
cag atc cta act gtc agt gga ggc ctc ttt agc aag gaa gcc cag act Gln Ile Leu Thr Val Ser Gly Gly Leu Phe Ser Lys Glu Ala Gln Thr 1065 1070 1075			3267
gaa ggc cga aca gtc cca gca gct gtc acc gac ctg agg atc aca gag Glu Gly Arg Thr Val Pro Ala Ala Val Thr Asp Leu Arg Ile Thr Glu 1080 1085 1090 1095			3315
aac tcc acc agg cac ctg tcc ttc cgc tgg acc gcc tca gag ggg gag Asn Ser Thr Arg His Leu Ser Phe Arg Trp Thr Ala Ser Glu Gly Glu 1100 1105 1110			3363
ctc agc tgg tac aac atc ttt ttg tac aac cca gat ggg aat ctc cag Leu Ser Trp Tyr Asn Ile Phe Leu Tyr Asn Pro Asp Gly Asn Leu Gln 1115 1120 1125			3411
gag aga gct caa gtt gac cca cta gtc cag agc ttc tct ttc cag aac Glu Arg Ala Gln Val Asp Pro Leu Val Gln Ser Phe Ser Phe Gln Asn			3459

1130	1135	1140	
ttg cta caa ggc aga atg tac aag atg gtg att gta act cac agt ggg Leu Leu Gln Gly Arg Met Tyr Lys Met Val Ile Val Thr His Ser Gly			3507
1145	1150	1155	
gag ctg tct aat gag tct ttc ata ttt ggt aga aca gtc cca gcc tct Glu Leu Ser Asn Glu Ser Phe Ile Phe Gly Arg Thr Val Pro Ala Ser			3555
1160	1165	1170	1175
gtg agt cat ctc agg ggg tcc aat cgg aac acg aca gac agc ctt tgg Val Ser His Leu Arg Gly Ser Asn Arg Asn Thr Thr Asp Ser Leu Trp			3603
1180	1185	1190	
ttc aac tgg agt cca gcc tct ggg gac ttt gac ttt tat gag ctg att Phe Asn Trp Ser Pro Ala Ser Gly Asp Phe Asp Phe Tyr Glu Leu Ile			3651
1195	1200	1205	
ctc tat aat ccc aat ggc aca aag aag gaa aac tgg aaa gac aag gac Leu Tyr Asn Pro Asn Gly Thr Lys Lys Glu Asn Trp Lys Asp Lys Asp			3699
1210	1215	1220	
ctg acg gag tgg cgg tttcaa ggc ctt gtt cct gga agg aag tac gtg Leu Thr Glu Trp Arg Phe Gln Gly Leu Val Pro Gly Arg Lys Tyr Val			3747
1225	1230	1235	
ctg tgg gta act cac agt gga gat ctc agc aat aaa gtc aca gcg Leu Trp Val Val Thr His Ser Gly Asp Leu Ser Asn Lys Val Thr Ala			3795
1240	1245	1250	1255
gag agc aga aca gct cca agt cct ccc agt ctt atg tca ttt gct gac Glu Ser Arg Thr Ala Pro Ser Pro Pro Ser Leu Met Ser Phe Ala Asp			3843
1260	1265	1270	
att gca aac aca tcc ttg gcc atc acg tgg aaa ggg ccc cca gac tgg Ile Ala Asn Thr Ser Leu Ala Ile Thr Trp Lys Gly Pro Pro Asp Trp			3891
1275	1280	1285	
aca gac tac aac gac ttt gag ctg cag tgg ttg ccc aga gat gca ctt Thr Asp Tyr Asn Asp Phe Glu Leu Gln Trp Leu Pro Arg Asp Ala Leu			3939
1290	1295	1300	
act gtc ttc aac ccc tac aac aac aga aaa tca gaa gga cgc att gtg Thr Val Phe Asn Pro Tyr Asn Asn Arg Lys Ser Glu Gly Arg Ile Val			3987
1305	1310	1315	
tat ggt ctt cgt cca ggg aga tcc tat caa ttc aac gtc aag act gtc Tyr Gly Leu Arg Pro Gly Arg Ser Tyr Gln Phe Asn Val Lys Thr Val			4035
1320	1325	1330	1335
agt ggt gat tcc tgg aaa act tac agc aaa cca att ttt gga tct gtg Ser Gly Asp Ser Trp Lys Thr Tyr Ser Lys Pro Ile Phe Gly Ser Val			4083
1340	1345	1350	
agg aca aag cct gac aag ata caa aac ctg cat tgc cgg cct cag aac Arg Thr Lys Pro Asp Lys Ile Gln Asn Leu His Cys Arg Pro Gln Asn			4131
1355	1360	1365	
tcc acg gcc att gcc tgt tct tgg atc cct cct gat tct gac ttt gat Ser Thr Ala Ile Ala Cys Ser Trp Ile Pro Pro Asp Ser Asp Phe Asp			4179
1370	1375	1380	
ggt tat agt att gaa tgc cgg aaa atg gac acc caa gaa gtt gag ttt Gly Tyr Ser Ile Glu Cys Arg Lys Met Asp Thr Gln Glu Val Glu Phe			4227

1385	1390	1395	
tcc aga aag ctg gag aaa gaa aaa tct ctg ctc aac atc atg atg cta Ser Arg Lys Leu Glu Lys Glu Lys Ser Leu Leu Asn Ile Met Met Leu			4275
1400	1405	1410	1415
gtg ccc cat aag agg tac ctg gtg tcc atc aaa gtg cag tcg gcc ggc Val Pro His Lys Arg Tyr Leu Val Ser Ile Lys Val Gln Ser Ala Gly			4323
1420	1425	1430	
atg acc agc gag gtg gtt gaa gac agc act atc aca atg ata gac cgc Met Thr Ser Glu Val Val Glu Asp Ser Thr Ile Thr Met Ile Asp Arg			4371
1435	1440	1445	
ccc cct cct cca ccc cca cac att cgt gtg aat gaa aag gat gtg cta Pro Pro Pro Pro Pro His Ile Arg Val Asn Glu Lys Asp Val Leu			4419
1450	1455	1460	
att agc aag tct tcc atc aac ttt act gtc aac tgc agc tgg ttc agc Ile Ser Lys Ser Ser Ile Asn Phe Thr Val Asn Cys Ser Trp Phe Ser			4467
1465	1470	1475	
gac acc aat gga gct gtg aaa tac ttc aca gtg gtg gtg aga gag gct Asp Thr Asn Gly Ala Val Lys Tyr Phe Thr Val Val Val Arg Glu Ala			4515
1480	1485	1490	1495
gat ggc agt gat gag ctg aag cca gaa cag cag cac cct ctc cct tcc Asp Gly Ser Asp Glu Leu Lys Pro Glu Gln Gln His Pro Leu Pro Ser			4563
1500	1505	1510	
tat ctg gag tac agg cac aat gcc tcc att cgg gtg tat cag act aat Tyr Leu Glu Tyr Arg His Asn Ala Ser Ile Arg Val Tyr Gln Thr Asn			4611
1515	1520	1525	
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1530	1535	1540	
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1545	1550	1555	
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1560	1565	1570	1575
gcc tac aga atc agc att cga gct ttt aca cag ctc ttt gat gag gac Ala Tyr Arg Ile Ser Ile Arg Ala Phe Thr Gln Leu Phe Asp Glu Asp			4803
1580	1585	1590	
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1610	1615	1620	
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1625	1630	1635	
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1640	1645	1650	1655	
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1660		1665		1670
ggc cag aaa ggt aac cgg aaa act tct tgt cca ata aaa ata aat cag Gly Gln Lys Gly Asn Arg Lys Thr Ser Cys Pro Ile Lys Ile Asn Gln				5091
1675		1680		1685
ttt gaa ggg cat ttc atg aag cta cag gct gac tcc aac tac ctt cta Phe Glu Gly His Phe Met Lys Leu Gln Ala Asp Ser Asn Tyr Leu Leu				5139
1690		1695		1700
tcc aag gaa tac gag gag tta aaa gac gtg ggc cga aac cag tca tgt Ser Lys Glu Tyr Glu Glu Leu Lys Asp Val Gly Arg Asn Gln Ser Cys				5187
1705		1710		1715
gac att gca ctc ttg ccg gag aat aga ggg aaa aat cga tac aac aat Asp Ile Ala Leu Leu Pro Glu Asn Arg Gly Lys Asn Arg Tyr Asn Asn				5235
1720		1725		1730
ata ttg ccc tat gat gcc acg cga gtg aag ctc tcc aat gta gat gat Ile Leu Pro Tyr Asp Ala Thr Arg Val Lys Leu Ser Asn Val Asp Asp				5283
1740		1745		1750
gat cct tgc tct gac tac atc aat gcc agc tac atc cct ggc aac aac Asp Pro Cys Ser Asp Tyr Ile Asn Ala Ser Tyr Ile Pro Gly Asn Asn				5331
1755		1760		1765
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1770		1775		1780
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1785		1790		1795
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1800		1805		1810
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1820		1825		1830
atg ctc tca gag tcc gtc ctg cct gag tgg acc atc cgg gag ttt aag Met Leu Ser Glu Ser Val Leu Pro Glu Trp Thr Ile Arg Glu Phe Lys				5571
1835		1840		1845
ata tgc ggt gag gaa cag ctt gat gca cac aga ctc atc cgc cac ttt Ile Cys Gly Glu Glu Gln Leu Asp Ala His Arg Leu Ile Arg His Phe				5619
1850		1855		1860
cac tat acg gtg tgg cca gac cat gga gtc cca gaa acc acc acc cag tct His Tyr Thr Val Trp Pro Asp His Gly Val Pro Glu Thr Thr Gln Ser				5667
1865		1870		1875
ctg atc cag ttt gtg aga act gtc agg gac tac atc aac aga agc ccg Leu Ile Gln Phe Val Arg Thr Val Arg Asp Tyr Ile Asn Arg Ser Pro				5715
1880		1885		1890
ggt gct ggg ccc act gtg gtg cac tgc agt gct ggt ggt agg act Gly Ala Gly Pro Thr Val Val His Cys Ser Ala Gly Val Gly Arg Thr				5763

1900	1905	1910		
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gac tct gtg gac att tat gga gca gtg cac gac cta aga ctt cac agg Asp Ser Val Asp Ile Tyr Gly Ala Val His Asp Leu Arg Leu His Arg 1930	1935	1940	5859	
gtt cac atg gtc cag act gag tgt cag tat gtc tac cta cat cag tgt Val His Met Val Gln Thr Glu Cys Gln Tyr Val Tyr Leu His Gln Cys 1945	1950	1955	5907	
gta aga gat gtc ctc aga gca aga aag cta cgg agt gaa caa gaa aac Val Arg Asp Val Leu Arg Ala Arg Lys Leu Arg Ser Glu Gln Glu Asn 1960	1965	1970	1975	5955
ccc ttg ttt cca atc tat gaa aat gtg aat cca gag tat cac aga gat Pro Leu Phe Pro Ile Tyr Glu Asn Val Asn Pro Glu Tyr His Arg Asp 1980	1985	1990	6003	
cca gtc tat tca agg cat tga ga atgtacctga agagctccctg gataaaaatt Pro Val Tyr Ser Arg His *			6056	
1995				
attcactgtg tgatttgttt ttaaaaaactt gcttcatgcc ctacagaggt gccagctatt tctgttgata ctatgtataa ttatataatc tggagaatgt ttaaaaatttt atataattta aaggtaacag atattattgt acatagttgt atttttagt ttcttctgtt aatatgtatt tttcataatg tttaatatta agctttat aatactattt ttccacacta aagtgttcat gacttgttct acataaaaact aattcaacct gtaaaaaaaaaaaaaaa 1995			6116	
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			6236	
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			6342	

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taaaaacaag gcaacttagc aatttgtat gtggaaattt tgaagtaaat ttccaaagta	120
gaacatgaag agatgcattcc ataaatccca ctagcaataa tggctccctc tgatcttagt	180
gatattcaact tttaagtgtat gccaataact attgtataaa tgctgtat attgacagcat	240
tcatctagtc agtctgtctt gaagacggtg aacttaaaag tagtgttatt ttttcttttc	300
catttactaa tgatatcctt agtttatag gcaccagtca cagatcaacc cgcgtccgccc	360
cacgcgtccg cccacgcgtc cgccccacgcg tccggtgcaa aatcagagag gggtgcaaga	420
tcctgatttt tcaggaggatc aagcgaca atg gca gcc caa tac ggc agt atg	472

Met Ala Ala Gln Tyr Gly Ser Met			
1	5.		
agc ttc aac ccc agc aca cca ggg gcc agt tat ggg cct gga agg caa Ser Phe Asn Pro Ser Thr Pro Gly Ala Ser Tyr Gly Pro Gly Arg Gln	520		
10	15	20	
gag ccc aga aat tcc caa ttg aga att gtg tta gtg ggt aaa acc gga Glu Pro Arg Asn Ser Gln Leu Arg Ile Val Leu Val Gly Lys Thr Gly	568		
25	30	35	40
gca gga aaa agt gca aca gga aac agc atc ctt ggc cgaa gtg ttt Ala Gly Lys Ser Ala Thr Gly Asn Ser Ile Leu Gly Arg Lys Val Phe	616		
45	50	55	
cat tct ggc act gca gca aaa tcc att acc aag aag tgt gag aaa cgc His Ser Gly Thr Ala Ala Lys Ser Ile Thr Lys Lys Cys Glu Lys Arg	664		
60	65	70	
agc agc tca tgg aag gaa aca gaa ctt gtc gta gtt gac aca cca ggc Ser Ser Trp Lys Glu Thr Glu Leu Val Val Val Asp Thr Pro Gly	712		
75	80	85	
att ttc gac aca gag gtg ccc aat gct gaa acg tcc aag gag att att Ile Phe Asp Thr Glu Val Pro Asn Ala Glu Thr Ser Lys Glu Ile Ile	760		
90	95	100	
cgc tgc att ctt ctg acc tcc cca ggg cct cat gct ctg ctt ctg gtg Arg Cys Ile Leu Leu Thr Ser Pro Gly Pro His Ala Leu Leu Leu Val	808		
105	110	115	120
gtt cca ctg ggc cgt tac act gag gaa gag cac aaa gcc aca gag aag Val Pro Leu Gly Arg Tyr Thr Glu Glu His Lys Ala Thr Glu Lys	856		
125	130	135	
atc ctg aaa atg ttt gga gag agg gct aga agt ttc atg att ctc ata Ile Leu Lys Met Phe Gly Glu Arg Ala Arg Ser Phe Met Ile Leu Ile	904		
140	145	150	
ttc acc cgg aaa gat gac tta ggt gac acc aat ttg cat gac tac tta Phe Thr Arg Lys Asp Asp Leu Gly Asp Thr Asn Leu His Asp Tyr Leu	952		
155	160	165	
agg gaa gct cca gaa gac att caa gac ttg atg gac att ttc ggt gac Arg Glu Ala Pro Glu Asp Ile Gln Asp Leu Met Asp Ile Phe Gly Asp	1000		
170	175	180	
cgc tac tgt gcg tta aac aac aag gca aca ggc gct gag cag gag gcc Arg Tyr Cys Ala Leu Asn Asn Lys Ala Thr Gly Ala Glu Gln Glu Ala	1048		
185	190	195	200
cag agg gca cag ttg ctg ggc ctg atc cag cgc gtg gtg agg gag aac Gln Arg Ala Gln Leu Leu Gly Leu Ile Gln Arg Val Val Arg Glu Asn	1096		
205	210	215	
aag gaa ggc tgc tac act aat agg atg tac caa agg gcg gag gag gag Lys Glu Gly Cys Tyr Thr Asn Arg Met Tyr Gln Arg Ala Glu Glu Glu	1144		
220	225	230	
atc cag aag caa aca caa gca atg caa gaa ctc cac aga gtg gag ctg Ile Gln Lys Gln Thr Gln Ala Met Gln Glu Leu His Arg Val Glu Leu	1192		
235	240	245	
gag aga gag aaa gcg cgg ata aga gag gag tat gaa gag aaa atc aga	1240		

Glu Arg Glu Lys Ala Arg Ile Arg Glu Glu Tyr Glu Glu Lys Ile Arg			
250	255	260	
aag ctg gaa gat aaa gtg gag cag gaa aag aga aag aag caa atg gag			1288
Lys Leu Glu Asp Lys Val Glu Gln Glu Lys Arg Lys Lys Gln Met Glu			
265	270	275	280
aag aaa cta gca gaa cag gag gct cac tat gct gta agg cag caa agg			1336
Lys Lys Leu Ala Glu Gln Glu Ala His Tyr Ala Val Arg Gln Gln Arg			
285	290	295	
gca aga acg gaa gtg gag agt aag gat ggg ata ctt gaa tta atc atg			1384
Ala Arg Thr Glu Val Glu Ser Lys Asp Gly Ile Leu Glu Leu Ile Met			
300	305	310	
aca gcg tta cag att gct tcc ttt att ttg tta cgt ctg ttc gcg gaa			1432
Thr Ala Leu Gln Ile Ala Ser Phe Ile Leu Leu Arg Leu Phe Ala Glu			
315	320	325	
gat taa acttaatgaa aatctgtttg tattttctgc atattctctg gcaacccttg			1488
Asp *			
330			
cccatactta cttatattac atagtcgagt gctctagttt ctgtctctca ggcactcgta			1548
actaaggacc accattggcc attggtagat gtttgattga cttaacaaga gagggcacaaa			1608
tttcaattt gtgaaaactcc aaagcagaaaa gtattggtgc ttgctacctt gtgaattctt			1668
ccttagacat gcagagaaaa tgtatgcaag agaccaaaaaa gatggctcca agctatgtca			1728
tgttacctgt aataaaaatct tttcttctag attctttcta tgttggcaga taatctcccc			1788
ttgttagcttc cactcactta ttcttgattt cagagtacaca atgatcatct tacccatgtg			1848
gtttttgaga aagaaagatc			1868

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tgcaactgtg gcactggcac ttatttcagt gaagaaaaac tttgtggttc tatggcattc			120
atcatttgac aaatgcaagc atcttcctta tcaatcagct cctattgaac ttactagcac			180
tgactgtgga atcccttaagg gcccattaca tttctgaaga agaaagctaa gatgaaggac			240
atg cca ctc cga att cat gtg cta ctt ggc cta gct atc act aca cta			288
Met Pro Leu Arg Ile His Val Leu Leu Gly Leu Ala Ile Thr Thr Leu			
1	5	10	15
gta caa gct gta gat aaa aaa gtg gat tgt cca cgg tta tgt acg tgt			336
Val Gln Ala Val Asp Lys Lys Val Asp Cys Pro Arg Leu Cys Thr Cys			

20	25	30	
gaa atc agg cct tgg ttt aca ccc aga tcc att tat atg gaa gca tct Glu Ile Arg Pro Trp Phe Thr Pro Arg Ser Ile Tyr Met Glu Ala Ser	35	40	384
35	45		
aca gtg gat tgt aat gat tta ggt ctt tta act ttc cca gcc aga ttg Thr Val Asp Cys Asn Asp Leu Gly Leu Leu Thr Phe Pro Ala Arg Leu	50	55	432
50	60		
cca gct aac aca cag att ctt ctc cta cag act aac aat att gca aaa Pro Ala Asn Thr Gln Ile Leu Leu Leu Gln Thr Asn Asn Ile Ala Lys	65	70	480
65	75	80	
att gaa tac tcc aca gac ttt cca gta aac ctt act ggc ctg gat tta Ile Glu Tyr Ser Thr Asp Phe Pro Val Asn Leu Thr Gly Leu Asp Leu	85	90	528
85	95		
tct caa aac aat tta tct tca gtc acc aat att aat gta aaa aag atg Ser Gln Asn Asn Leu Ser Ser Val Thr Asn Ile Asn Val Lys Lys Met	100	105	576
100	110		
cct cag ctc ctt tct gtg tac cta gag gaa aac aaa ctt act gaa ctg Pro Gln Leu Leu Ser Val Tyr Leu Glu Asn Lys Leu Thr Glu Leu	115	120	624
115	125		
cct gaa aaa tgt ctg tcc gaa ctg agc aac tta caa gaa ctc tat att Pro Glu Lys Cys Leu Ser Glu Leu Ser Asn Leu Gln Glu Leu Tyr Ile	130	135	672
130	140		
aat cac aac ttg ctt tct aca att tca cct gga gcc ttt att ggc cta Asn His Asn Leu Leu Ser Thr Ile Ser Pro Gly Ala Phe Ile Gly Leu	145	150	720
145	155	160	
cat aat ctt ctt cga ctt cat ctc aat tca aat aga ttg cag atg atc His Asn Leu Leu Arg Leu His Leu Asn Ser Asn Arg Leu Gln Met Ile	165	170	768
165	175		
aac agt aag tgg ttt gat gct ctt cca aat cta gag att ctg atg att Asn Ser Lys Trp Phe Asp Ala Leu Pro Asn Leu Glu Ile Leu Met Ile	180	185	816
180	190		
ggg gaa aat cca att atc aga atc aaa gac atg aac ttt aag cct ctt Gly Glu Asn Pro Ile Ile Arg Ile Lys Asp Met Asn Phe Lys Pro Leu	195	200	864
195	205		
atc aat ctt cgc agc ctg gtt ata gct ggt ata aac ctc aca gaa ata Ile Asn Leu Arg Ser Leu Val Ile Ala Gly Ile Asn Leu Thr Glu Ile	210	215	912
210	220		
cca gat aac gcc ttg gtt gga ctg gaa aac tta gaa agc atc tct ttt Pro Asp Asn Ala Leu Val Gly Leu Glu Asn Leu Glu Ser Ile Ser Phe	225	230	960
225	235	240	
tac gat aac agg ctt att aaa gta ccc cat gtt gct ctt caa aaa gtt Tyr Asp Asn Arg Leu Ile Lys Val Pro His Val Ala Leu Gln Lys Val	245	250	1008
245	255		
gta aat ctc aaa ttt ttg gat cta aat aaa aat cct att aat aga ata Val Asn Leu Lys Phe Leu Asp Leu Asn Lys Asn Pro Ile Asn Arg Ile	260	265	1056
260	270		
cga agg ggt gat ttt agc aat atg cta cac tta aaa gag ttg ggg ata Arg Arg Gly Asp Phe Ser Asn Met Leu His Leu Lys Glu Leu Gly Ile			1104

275

280

285

aat aat atg cct gag ctg att tcc atc gat agt ctt gct gtg gat aac Asn Asn Met Pro Glu Leu Ile Ser Ile Asp Ser Leu Ala Val Asp Asn 290 295 300	1152
ctg cca gat tta aga aaa ata gaa gct act aac aac cct aga ttg tct Leu Pro Asp Leu Arg Lys Ile Glu Ala Thr Asn Asn Pro Arg Leu Ser 305 310 315 320	1200
tac att cac ccc aat gca ttt ttc aga ctc ccc aag ctg gaa tca ctc Tyr Ile His Pro Ala Phe Phe Arg Leu Pro Lys Leu Glu Ser Leu 325 330 335	1248
atg ctg aac agc aat gct ctc agt gcc ctg tac cat ggt acc att gag Met Leu Asn Ser Asn Ala Leu Ser Ala Leu Tyr His Gly Thr Ile Glu 340 345 350	1296
tct ctg cca aac ctc aag gaa atc agc ata cac agt aac ccc atc agg Ser Leu Pro Asn Leu Lys Glu Ile Ser Ile His Ser Asn Pro Ile Arg 355 360 365	1344
tgt gac tgt gtc atc cgt tgg atg aac atg aac aaa acc aac att cga Cys Asp Cys Val Ile Arg Trp Met Asn Met Asn Lys Thr Asn Ile Arg 370 375 380	1392
ttc atg gag cca gat tca ctg ttt tgc gtg gac cca cct gaa ttc caa Phe Met Glu Pro Asp Ser Leu Phe Cys Val Asp Pro Pro Glu Phe Gln 385 390 395 400	1440
ggt cag aat gtt cgg caa gtg cat ttc agg gac atg gaa att tgt Gly Gln Asn Val Arg Gln Val His Phe Arg Asp Met Met Glu Ile Cys 405 410 415	1488
ctc cct ctt ata gct cct gag agc ttt cct tct aat cta aat gta gaa Leu Pro Leu Ile Ala Pro Glu Ser Phe Pro Ser Asn Leu Asn Val Glu 420 425 430	1536
gct ggg agc tat gtt tcc ttt cac tgt aga gct act gca gaa cca cag Ala Gly Ser Tyr Val Ser Phe His Cys Arg Ala Thr Ala Glu Pro Gln 435 440 445	1584
cct gaa atc tac tgg ata aca cct tct ggt caa aaa ctc ttg cct aat Pro Glu Ile Tyr Trp Ile Thr Pro Ser Gly Gln Lys Leu Leu Pro Asn 450 455 460	1632
acc ctg aca gac aag ttc tat gtc cat tct gag gga aca cta gat ata Thr Leu Thr Asp Lys Phe Tyr Val His Ser Glu Gly Thr Leu Asp Ile 465 470 475 480	1680
aat ggc gta act ccc aaa gaa ggg ggt tta tat act tgt ata gca act Asn Gly Val Thr Pro Lys Glu Gly Leu Tyr Thr Cys Ile Ala Thr 485 490 495	1728
aac cta gtt ggc gct gac ttg aag tct gtt atg atc aaa gtg gat gga Asn Leu Val Gly Ala Asp Leu Lys Ser Val Met Ile Lys Val Asp Gly 500 505 510	1776
tct ttt cca caa gat aac aat ggc tct ttg aat att aaa ata aga gat Ser Phe Pro Gln Asp Asn Asn Gly Ser Leu Asn Ile Lys Ile Arg Asp 515 520 525	1824
att cag gcc aat tca gtt ttg gtg tcc tgg aaa gca agt tct aaa att Ile Gln Ala Asn Ser Val Leu Val Ser Trp Lys Ala Ser Ser Lys Ile	1872

530	535	540	
ctc aaa tct agt gtt aaa tgg aca gcc ttt gtc aag act gaa aat tct Leu Lys Ser Ser Val Lys Trp Thr Ala Phe Val Lys Thr Glu Asn Ser 545	550	555	1920
cat gct gcg caa agt gct cga ata cca tct gat gtc aag gta tat aat His Ala Ala Gln Ser Ala Arg Ile Pro Ser Asp Val Lys Val Tyr Asn 565	570	575	1968
ctt act cat ctg aat cca tca act gag tat aaa att tgt att gat att Leu Thr His Leu Asn Pro Ser Thr Glu Tyr Lys Ile Cys Ile Asp Ile 580	585	590	2016
ccc acc atc tat cag aaa aac aga aaa aaa tgt gta aat gtc acc acc Pro Thr Ile Tyr Gln Lys Asn Arg Lys Lys Cys Val Asn Val Thr Thr 595	600	605	2064
aaa ggt ttg cac cct gat caa aaa gag tat gaa aag aat aat acc aca Lys Gly Leu His Pro Asp Gln Lys Glu Tyr Glu Lys Asn Asn Thr Thr 610	615	620	2112
aca ctt atg gcc tgt ctt gga ggc ctt ctg ggg att att ggt gtg ata Thr Leu Met Ala Cys Leu Gly Gly Leu Leu Gly Ile Ile Gly Val Ile 625	630	635	2160
tgt ctt atc agc tgc ctc tct cca gaa atg aac tgt gat ggt gga cac Cys Leu Ile Ser Cys Leu Ser Pro Glu Met Asn Cys Asp Gly Gly His 645	650	655	2208
agc tat gtg agg aat tac tta cag aaa cca acc ttt gca tta ggt gag Ser Tyr Val Arg Asn Tyr Leu Gln Lys Pro Thr Phe Ala Leu Gly Glu 660	665	670	2256
ctt tat cct cct ctg ata aat ctc tgg gaa gca gga aaa gaa aaa agt Leu Tyr Pro Pro Leu Ile Asn Leu Trp Glu Ala Gly Lys Glu Lys Ser 675	680	685	2304
aca tca ctg aaa gta aaa gca act gtt ata ggt tta cca aca aat atg Thr Ser Leu Lys Val Lys Ala Thr Val Ile Gly Leu Pro Thr Asn Met 690	695	700	2352
tcc taa aaaccaccaa ggaaacctac tccaaaaatg aacaaaaaaaaaaaaaagcga Ser *			2408
705			
aagactgcag ttgtgctaaa aacaaaacaa aacaaacaaa caaaaaaaaaaaa aaa			2461

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 <212> DNA  
 <213> Homo sapiens

<220>  
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 <222> (214)..(1764)

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 aacattaact cataaggcctt ggaagcggga gctttgtat ccaggttctt ctaaggatga  
 120

tgtgatttag	aaaggtatct	ttttgccaca	tacgttgctc	cttctgccac	tcttgacatt	180
ggactccaac	aggaaaagaa	aaaagaaaatt	tat atg aaa	ata cag cca cca	ttt	234
			Met Lys Ile Gln	Pro Pro Phe		
			1	5		
gaa gac ctt	ttt gac aca	gca gag gaa	tat atc ctt	ctc ctc ctt	ctt	282
Glu Asp Leu	Phe Asp Thr Ala	Glu Glu Tyr	Ile Leu Leu Leu			
10	15	20				
gag cca tgg	aca aag atg	gta aaa tcg	gac caa att	gct tat aaa	aag	330
Glu Pro Trp	Thr Lys Met Val	Lys Ser Asp Gln	Ile Ala Tyr Lys			
25	30	35				
gtg gag ctg	gtg gaa gaa	act cga cag	tta gac tcc	aca tac ttc	aga	378
Val Glu Leu	Val Glu Thr Arg	Gln Leu Asp Ser	Thr Tyr Phe Arg			
40	45	50	55			
aag cta cag	gct ttg cat	aaa gag aca	ttt tcc aag	aaa gct gag	gac	426
Lys Leu Gln	Ala Leu His	Lys Glu Thr	Phe Ser Lys	Lys Ala Glu Asp		
60	65	70				
acc act tgt	gaa att gga	act ggc	att tta	tca ctc tct	aac gtc tct	474
Thr Thr Cys	Glu Ile Gly	Thr Gly	Ile Leu Ser	Leu Ser Asn Val	Ser	
75	80	85				
aaa cga aca	gaa tat tgg	aat gtt	cct gca	gaa tac aag	cat ttt	522
Lys Arg Thr	Glu Tyr Trp	Asp Asn Val	Pro Ala Glu	Tyr Lys His	Phe	
90	95	100				
aag ttt agt	gat ctg	ctt aac	aaa ctg	gag ttt	gaa cat ttc	570
Lys Phe Ser	Asp Leu	Leu Asn	Lys Leu	Glu Phe	Glu His Phe Arg	
105	110	115				
cag ttt ctt	gag act cat	tct tca	agc atg	gat ctt	atg tgc tgg	618
Gln Phe Leu	Glu Thr His	Ser Ser Met	Asp Leu	Met Cys	Trp Thr	
120	125	130	135			
gac att gag	cag ttc	cgg aga	ata act	tac aga	gat cga	666
Asp Ile Glu	Gln Phe	Arg Arg	Ile Thr	Tyr Arg Asp Arg	Asn Gln Arg	
140	145	150				
aag gca aaa	tct ata tac	att aaa aac	aaa tac	ttt aat	aaa tat	714
Lys Ala Lys	Ser Ile Tyr	Ile Lys Asn	Lys Tyr	Leu Asn	Lys Tyr	
155	160	165				
ttc ttt gga	ccc aac	agt cca	gct tct	ctg tat	cag cag aac	762
Phe Phe Gly	Pro Asn Ser	Pro Ala	Ser Leu	Tyr Gln	Gln Asn Gln Val	
170	175	180				
atg cat tta	agt ggt	ggc tgg	ggg aag	att ctt	cat gag cag	810
Met His Leu	Ser Gly	Gly Trp	Gly Lys	Ile Leu	His Glu Gln Leu Asp	
185	190	195				
gca cct gtt	cta gtt	gaa atc	cag aag	cat gtg	caa aat	858
Ala Pro Val	Leu Val	Glu Ile	Gln Lys	His Val	Gln Asn Arg Leu Glu	
200	205	210	215			
aat gta tgg	ctg cca	ttg ttt	ctt qca	agt gaa	cag ttt	906
Asn Val Trp	Leu Pro	Leu Phe	Leu Ala	Ser Glu	Gln Phe Ala Ala Arg	
220	225	230				
cag aag	ata aag	gta cag	atg aaa	gac ata	gca gaa gag	954
					ctc tta cta	

Gln Lys Ile Lys Val Gln Met Lys Asp Ile Ala Glu Glu Leu Leu			
235	240	245	
cag aag gct gaa aag aaa atc ggg gtc tgg aag cct gtg gag agt aag			1002
Gln Lys Ala Glu Lys Lys Ile Gly Val Trp Lys Pro Val Glu Ser Lys			
250	255	260	
tgg atc tct tca tct tgt aaa atc att gct ttt cgc aaa gca tta ttg			1050
Trp Ile Ser Ser Ser Cys Lys Ile Ile Ala Phe Arg Lys Ala Leu Leu			
265	270	275	
aat cca gtt act tca aga caa ttt caa cgt ttt gtg gct cta aaa gga			1098
Asn Pro Val Thr Ser Arg Gln Phe Gln Arg Phe Val Ala Leu Lys Gly			
280	285	290	295
gat tta ttg gaa aat ggt tta ctc ttt tgg caa gaa gta caa aaa tat			1146
Asp Leu Leu Glu Asn Gly Leu Leu Phe Trp Gln Glu Val Gln Lys Tyr			
300	305	310	
aag gac ttg tgc cat tct cat tgt gat gag tct gtc atc cag aag aag			1194
Lys Asp Leu Cys His Ser His Cys Asp Glu Ser Val Ile Gln Lys Lys			
315	320	325	
att aca act att atc aac tgc ttt att aat tcc agt att cca cca gct			1242
Ile Thr Thr Ile Ile Asn Cys Phe Ile Asn Ser Ser Ile Pro Pro Ala			
330	335	340	
tta caa att gac att cca gta gag caa gcc cag aag att att gaa cac			1290
Leu Gln Ile Asp Ile Pro Val Glu Gln Ala Gln Lys Ile Ile Glu His			
345	350	355	
cgg aag gag tta gga cca tat gta ttt aga gag gca cag atg aca att			1338
Arg Lys Glu Leu Gly Pro Tyr Val Phe Arg Glu Ala Gln Met Thr Ile			
360	365	370	375
ttt ggg gtt ctg ttt aaa ttc tgg cct cag ttc tgt gag ttt agg aag			1386
Phe Gly Val Leu Phe Lys Phe Trp Pro Gln Phe Cys Glu Phe Arg Lys			
380	385	390	
aat tta aca gat gaa aat att atg agt gtt tta gag aga aga caa gaa			1434
Asn Leu Thr Asp Glu Asn Ile Met Ser Val Leu Glu Arg Arg Gln Glu			
395	400	405	
tat aat aag cag aaa aaa ttg gca gtc cta gaa gac gaa aaa tct			1482
Tyr Asn Lys Gln Lys Lys Lys Leu Ala Val Leu Glu Asp Glu Lys Ser			
410	415	420	
gga aag gat gga atc aaa caa tat gca aat act tca gtg cct gct atc			1530
Gly Lys Asp Gly Ile Lys Gln Tyr Ala Asn Thr Ser Val Pro Ala Ile			
425	430	435	
aaa act gct tta ctc agt gat tcc ttc cta ggc ctc caa cca tat ggc			1578
Lys Thr Ala Leu Leu Ser Asp Ser Phe Leu Gly Leu Gln Pro Tyr Gly			
440	445	450	455
cga cag cca acc tgg tgc tac tca aag tat ata gaa gcc tta gaa cag			1626
Arg Gln Pro Thr Trp Cys Tyr Ser Lys Tyr Ile Glu Ala Leu Glu Gln			
460	465	470	
gag aga att ctt ctt aag atc caa gaa gaa cta gaa aaa aag ttg ttt			1674
Glu Arg Ile Leu Leu Lys Ile Gln Glu Glu Leu Glu Lys Lys Leu Phe			
475	480	485	
gca ggc ttg caa cct ctc aca aat ttt aag gct agc tct tca act atg			1722

Ala Gly Leu Gln Pro Leu Thr Asn Phe Lys Ala Ser Ser Ser Thr Met  
 490 495 500

tct ttg aaa aag aat atg tct gcc cac agc agc cag aag tga cagcatt	1771
Ser Leu Lys Lys Asn Met Ser Ala His Ser Ser Gln Lys *	
505 510 515	
cttgcataatg tttacatcct gctgctgata gggtcaagga attctttaaa ccagattctg	1831
ctgacatgag aagctccagt gatttgttt tttgaaggtc tgtatcagag caagcctaac	1891
atctaaataa agttttagttc tggattttcc aggtggaaa taaataaaaaa aaaaaaaaaa	1948

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<220>  
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<400> 503	
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cct gaa cga cca cca tac ctg gac aaa tat gaa aaa ttt ttt agg gaa Pro Glu Arg Pro Pro Tyr Leu Asp Lys Tyr Glu Lys Phe Phe Arg Glu 400 405 410	1429
gca gaa gaa aca aat gga ggc gcc caa atc cag cca tta cct gct gac Ala Glu Glu Thr Asn Gly Gly Ala Gln Ile Gln Pro Leu Pro Ala Asp 415 420 425	1477
tgc ggt ata tct tca gcc aca gaa aag cca gac tca aaa aca aaa atg Cys Gly Ile Ser Ser Ala Thr Glu Lys Pro Asp Ser Lys Thr Lys Met 430 435 440 445	1525
gat ctg ggt ggc cac gtg aag cgt aaa cat tta tcc tat gtg gtt tct Asp Leu Gly Gly His Val Lys Arg Lys His Leu Ser Tyr Val Val Ser 450 455 460	1573

cct tag accttgggtt catggttcag cagaggtaatc ataggagcaa atggttctca Pro *	1629
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agctcctcgg cctcategga acatttccac caccattact ctttgaaa ctggtgccc	240
ggttccttca agaggcacag gatgtcttg ctttttatac agaggtgcc a ccagcactat	300
gatctcagct accgcaacaa ggacgtgcgc agcaccgtga gtcactacca gcgggagaag	360
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caccggccggg agtccgaggg cttccgtcgg gcgtccgcct cttctccca gcagcaggcc	480
tgcagcact ccctgagctc tgaagtca gatcgaaaggcag cttcagccta cgattatggc	540
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cccaaaccaa agagagccaa gcacagccta ctgtctggag aagagaaaaga aaatttgc	660
agtgactac atg gta ccc att ttc tca gga cgt caa aag cat gtc agt	708
Met Val Pro Ile Phe Ser Gly Arg Gln Lys His Val Ser	
1 5 10	
gga att act gat acg gaa gaa aga att aag gaa gct gct gct tat	756
Gly Ile Thr Asp Thr Glu Glu Arg Ile Lys Glu Ala Ala Ala Tyr	
15 20 25	
ata gcc cag agg aat ctt ctt gct agt gag gaa gga atc aca aca cct	804
Ile Ala Gln Arg Asn Leu Leu Ala Ser Glu Glu Gly Ile Thr Thr Pro	
30 35 40 45	
aaa cag tcc acg gca tcc aag cag acc acg gca tct aag cag tcc acg	852
Lys Gln Ser Thr Ala Ser Lys Gln Thr Ala Ser Lys Gln Ser Thr	
50 55 60	
gca tcc aag cag tcc aca gca tcc aag cag tcc acg gca tcc agg cag	900
Ala Ser Lys Gln Ser Thr Ala Ser Lys Gln Ser Thr Ala Ser Arg Gln	
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Ser Thr Ala Ser Arg Gln Ser Val Val Ser Lys Gln Ala Thr Ser Ala	
80 85 90	
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Leu Gln Gln Glu Glu Thr Ser Glu Lys Lys Ser Arg Lys Val Val Ile	
95 100 105	
cga gga aag gca gaa cgc ctg tcc ctg agg aaa aca tta gaa gaa acc	1044
Arg Gly Lys Ala Glu Arg Leu Ser Leu Arg Lys Thr Leu Glu Glu Thr	
110 115 120 125	
gag aca tat cat gcc aag ctg aat gaa gac cat ctt ctc cat gct cct	1092
Glu Thr Tyr His Ala Lys Leu Asn Glu Asp His Leu Leu His Ala Pro	
130 135 140	
gag ttt atc att aaa cct cgc tcc cac acg gtt tgg gag aag gag aat	1140
Glu Phe Ile Ile Lys Pro Arg Ser His Thr Val Trp Glu Lys Glu Asn	

145	150	155	
gta aaa ttg cat tgc tcc ata gca gga tgg cca gaa cct cgt gtc acg Val Lys Leu His Cys Ser Ile Ala Gly Trp Pro Glu Pro Arg Val Thr			1188
160	165	170	
tgg tat aaa aac cag gtg cca ata aat gtc cat gca aac cct gga aag Trp Tyr Lys Asn Gln Val Pro Ile Asn Val His Ala Asn Pro Gly Lys			1236
175	180	185	
tat att att gag agt cga tat gga atg cac act ctg gag att aat gca Tyr Ile Ile Glu Ser Arg Tyr Gly Met His Thr Leu Glu Ile Asn Ala			1284
190	195	200	205
tgt gat ttt gaa gat aca gct cag tac cgg gcc tcg gcg atg aat gtt Cys Asp Phe Glu Asp Thr Ala Gln Tyr Arg Ala Ser Ala Met Asn Val			1332
210	215	220	
aaa gga gag ctt tcg gca tat gct tca gtt gtg gta aaa agg tat aag Lys Gly Glu Leu Ser Ala Tyr Ala Ser Val Val Val Lys Arg Tyr Lys			1380
225	230	235	
gga gag ttt gat gag act cgc ttc cat gct ggg gct tcc acc atg ccc Gly Glu Phe Asp Glu Thr Arg Phe His Ala Gly Ala Ser Thr Met Pro			1428
240	245	250	
ctc agc ttt ggt gtg acc cca tat ggt tat gca tcc cgg ttt gag atc Leu Ser Phe Gly Val Thr Pro Tyr Gly Tyr Ala Ser Arg Phe Glu Ile			1476
255	260	265	
cac ttt gat gac aaa ttt gat gtg tat ttt ggg aga gag gga gag aca His Phe Asp Asp Lys Phe Asp Val Ser Phe Gly Arg Glu Gly Glu Thr			1524
270	275	280	285
atg agt cta ggc tgt gtt gtc atc act cct gaa att aaa cat ttc Met Ser Leu Gly Cys Arg Val Val Ile Thr Pro Glu Ile Lys His Phe			1572
290	295	300	
cag cca gag atc cgg tgg tac aga aat gga gta cct ctt tct cca tca Gln Pro Glu Ile Arg Trp Tyr Arg Asn Gly Val Pro Leu Ser Pro Ser			1620
305	310	315	
aaa tgg gtg caa aca ctt tgg agt gga gag cgg gca acg ctg aca ttt Lys Trp Val Gln Thr Leu Trp Ser Gly Glu Arg Ala Thr Leu Thr Phe			1668
320	325	330	
tcc cat ctc aac aaa gaa gat gaa ggc ctc tat aca atc cgt gta cgg Ser His Leu Asn Lys Glu Asp Glu Gly Leu Tyr Thr Ile Arg Val Arg			1716
335	340	345	
atg gga gaa tat tat gaa caa tat agt gct tat gtc ttt gtt cga gat Met Gly Glu Tyr Tyr Glu Gln Tyr Ser Ala Tyr Val Phe Val Arg Asp			1764
350	355	360	365
gct gat gca gag att gaa gga gcc cca gct gct ccc ttg gat gtg aag Ala Asp Ala Glu Ile Glu Gly Ala Pro Ala Ala Pro Leu Asp Val Lys			1812
370	375	380	
tgc ttg gag gcc aac aaa gat tat atc atc atc tcc tgg aaa cag cca Cys Leu Glu Ala Asn Lys Asp Tyr Ile Ile Ile Ser Trp Lys Gln Pro			1860
385	390	395	
gct gtc gat gga ggg agt cct att ctc gga tat ttt att gat aag tgt Ala Val Asp Gly Gly Ser Pro Ile Leu Gly Tyr Phe Ile Asp Lys Cys			1908

400	405	410	
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ttt gct cgt ttt cct gtc act gga ttg atc gaa ggt cgt tcc tat atc Phe Ala Arg Phe Pro Val Thr Gly Leu Ile Glu Gly Arg Ser Tyr Ile 430	435	440	2004
ttc cga gtt cga gct gtg aat aaa atg gga ata ggt ttc cca tct cga Phe Arg Val Arg Ala Val Asn Lys Met Gly Ile Gly Phe Pro Ser Arg 450	455	460	2052
gtt tcc gag gcc gtg gct gct ctg gat ccg gct gag aaa gct aga cta Val Ser Glu Ala Val Ala Leu Asp Pro Ala Glu Lys Ala Arg Leu 465	470	475	2100
aag tcg ccc ctc agc acc ctg gac tgg aca gtc att gtt act gaa gag Lys Ser Pro Leu Ser Thr Leu Asp Trp Thr Val Ile Val Thr Glu Glu 480	485	490	2148
gaa cct tca gag ggt att gtg cct ggc ccc ccg aca gac ctc tct gtc Glu Pro Ser Glu Gly Ile Val Pro Gly Pro Pro Thr Asp Leu Ser Val 495	500	505	2196
act gag gcc acc cgg agc tat gtg gtg ctc agc tgg aag ccc cct ggc Thr Glu Ala Thr Arg Ser Tyr Val Val Leu Ser Trp Lys Pro Pro Gly 510	515	520	2244
cag cgt ggt cat gag ggc att atg tac ttt gtg gaa aag tgt gag gca Gln Arg Gly His Glu Gly Ile Met Tyr Phe Val Glu Lys Cys Glu Ala 530	535	540	2292
gga aca gaa aac tgg cag cga gtg aac acg gag ctc cct gtg aag tct Gly Thr Glu Asn Trp Gln Arg Val Asn Thr Glu Leu Pro Val Lys Ser 545	550	555	2340
ccc cgc ttt gct ctg ttt gac ttg gcc gag ggg aaa tcc tac tgt ttc Pro Arg Phe Ala Leu Phe Asp Leu Ala Glu Gly Lys Ser Tyr Cys Phe 560	565	570	2388
cgt gtc cgc tgt tct aat tct gca gga gtt ggt gag ccc tca gag gca Arg Val Arg Cys Ser Asn Ser Ala Gly Val Gly Glu Pro Ser Glu Ala 575	580	585	2436
acg gag gtg act gtg gta ggg gac aaa ctt gat atc ccc aag gct cct Thr Glu Val Thr Val Val Gly Asp Lys Leu Asp Ile Pro Lys Ala Pro 590	595	600	2484
ggc aaa atc atc cca agc aga aac aca gac acc tca gtg gta gtt tcg Gly Lys Ile Ile Pro Ser Arg Asn Thr Asp Thr Ser Val Val Val Ser 610	615	620	2532
tgg gag gag tcc aaa gat gcc aaa gag ctg gtc ggg tac tac ata gag Trp Glu Glu Ser Lys Asp Ala Lys Glu Leu Val Gly Tyr Tyr Ile Glu 625	630	635	2580
gcg agc gtt gct ggc tct ggc aag tgg gag ccc tgt aac aac aac ccc Ala Ser Val Ala Gly Ser Gly Lys Trp Glu Pro Cys Asn Asn Asn Pro 640	645	650	2628
gtg aag ggc tca cga ttc act tgt cat gga tta gtg act ggt cag agt Val Lys Gly Ser Arg Phe Thr Cys His Gly Leu Val Thr Gly Gln Ser			2676

655	660	665	
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tcc cag gat tca gaa gct att gaa gtc aaa gct gct att gca cca cca Ser Gln Asp Ser Glu Ala Ile Glu Val Lys Ala Ala Ile Ala Pro Pro 690	695	700	2772
tct cca ccc tgt gat atc acc tgt ctt gaa agt ttt cgt gac tca atg Ser Pro Pro Cys Asp Ile Thr Cys Leu Glu Ser Phe Arg Asp Ser Met 705	710	715	2820
gtt ctt gga tgg aag caa cca gat aag att gga ggg gca gaa att act Val Leu Gly Trp Lys Gln Pro Asp Lys Ile Gly Gly Ala Glu Ile Thr 720	725	730	2868
ggc tat tat gtg aac tat cgc gag gtc att gat ggg gta cca gga aaa Gly Tyr Tyr Val Asn Tyr Arg Glu Val Ile Asp Gly Val Pro Gly Lys 735	740	745	2916
tgg aga gaa gcc aat gtc aag gct gtc agt gag gag gca tac aag att Trp Arg Glu Ala Asn Val Lys Ala Val Ser Glu Glu Ala Tyr Lys Ile 750	755	760	2964
agc aac ttg aag gaa aac atg gtg tat cag ttc caa gtg gca gcc atg Ser Asn Leu Lys Glu Asn Met Val Tyr Gln Phe Gln Val Ala Ala Met 770	775	780	3012
aac atg gct ggg ctg ggc ccc tcc gca gta agc gaa tgc ttc aaa Asn Met Ala Gly Leu Gly Ala Pro Ser Ala Val Ser Glu Cys Phe Lys 785	790	795	3060
tgt gaa gag tgg acc atc gcc gtc cca gga cca ccg cac agt ctc aag Cys Glu Glu Trp Thr Ile Ala Val Pro Gly Pro Pro His Ser Leu Lys 800	805	810	3108
tgt agt gaa gtc agg aaa gac tca ctg gtt ctc cag tgg aag ccg cca Cys Ser Glu Val Arg Lys Asp Ser Leu Val Leu Gln Trp Lys Pro Pro 815	820	825	3156
gtc cac tcc ggg cgg act ccg gtc act ggt tac ttc gtg gac ttg aag Val His Ser Gly Arg Thr Pro Val Thr Gly Tyr Phe Val Asp Leu Lys 830	835	840	3204
gag gcc aag gcc aaa gaa gac cag tgg cga ggg ctc aat gag gcg gct Glu Ala Lys Ala Lys Glu Asp Gln Trp Arg Gly Leu Asn Glu Ala Ala 850	855	860	3252
att aaa aac gta tac ctg aag gtt cga ggc ctc aag gag ggc gtc agc Ile Lys Asn Val Tyr Leu Lys Val Arg Gly Leu Lys Glu Gly Val Ser 865	870	875	3300
tac gtg ttc cgt gtt cga gcc ata aac cag gcg gga gtt ggg aag cca Tyr Val Phe Arg Val Arg Ala Ile Asn Gln Ala Gly Val Gly Lys Pro 880	885	890	3348
tct gac ctt gct ggc cct gtt gtg gca gag acc cgt cca gga acc aaa Ser Asp Leu Ala Gly Pro Val Val Ala Glu Thr Arg Pro Gly Thr Lys 895	900	905	3396
gag gtt gtt gta aat gtg gat gat gat gga gtc att tca ttg aac ttc Glu Val Val Val Asn Val Asp Asp Gly Val Ile Ser Leu Asn Phe			3444

910	915	920	925	
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tat gta tcc act gag gac tct cca cga ttg gaa gtc gaa agc aag ggc Tyr Val Ser Thr Glu Asp Ser Pro Arg Leu Glu Val Glu Ser Lys Gly 945 950 955				3540
aac aag acg aaa atg acc ttc aaa gac ctt ggg atg gat gac ttg ggt Asn Lys Thr Lys Met Thr Phe Lys Asp Leu Gly Met Asp Asp Leu Gly 960 965 970				3588
att tac tct tgc gat gta aca gac act gat gga ata gca tca agc tac Ile Tyr Ser Cys Asp Val Thr Asp Thr Asp Gly Ile Ala Ser Ser Tyr 975 980 985				3636
tta ata gat gag gaa gaa ttg aaa cgt tta ctt gct ctc agc cat gaa Leu Ile Asp Glu Glu Leu Lys Arg Leu Leu Ala Leu Ser His Glu 990 995 1000 1005				3684
cac aag ttc cca act gtc cca gtt aaa tca gag ttg gca gtt gaa att His Lys Phe Pro Thr Val Pro Val Lys Ser Glu Leu Ala Val Glu Ile 1010 1015 1020				3732
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ggc aat gcc aaa gtc aac tac ata ttt aac gag aag gaa att ttt gaa Gly Asn Ala Lys Val Asn Tyr Ile Phe Asn Glu Lys Glu Ile Phe Glu 1040 1045 1050				3828
ggc ccg aaa tat aaa atg cat att gac cga aac act ggc atc atc gaa Gly Pro Lys Tyr Lys Met His Ile Asp Arg Asn Thr Gly Ile Ile Glu 1055 1060 1065				3876
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gaa gtg act ggt gaa tgt aat gta cta ttg aaa tgc aag gtg gca aat Glu Val Thr Gly Glu Cys Asn Val Leu Leu Lys Cys Lys Val Ala Asn 1135 1140 1145				4116
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tca gtg gat gaa aag cat gac ttt aag gat ggt ata tgt acc ctg ctt Ser Val Asp Glu Lys His Asp Phe Lys Asp Gly Ile Cys Thr Leu Leu				4212

1170	1175	1180	
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aaa gat gac cga gga aaa gat aag agc aga ctg aag ctt gtg gat gaa Lys Asp Asp Arg Gly Lys Asp Lys Ser Arg Leu Lys Leu Val Asp Glu 1200	1205	1210	4308
gcc ttt aag gaa ctg atg atg gaa gta tgc aaa aaa ata gct ttg tct Ala Phe Lys Glu Leu Met Met Glu Val Cys Lys Lys Ile Ala Leu Ser 1215	1220	1225	4356
gct aca gac ctg aaa atc cag agc aca gcc gag ggc atc caa ctg tac Ala Thr Asp Leu Lys Ile Gln Ser Thr Ala Glu Gly Ile Gln Leu Tyr 1230	1235	1240	4404
tct ttt gta act tac tat gtg gag gat ttg aaa gtt aac tgg tcc cac Ser Phe Val Thr Tyr Val Glu Asp Leu Lys Val Asn Trp Ser His 1250	1255	1260	4452
aat ggg tcc gcc att agg tac tca gac aga gtt aag acc ggg gtc act Asn Gly Ser Ala Ile Arg Tyr Ser Asp Arg Val Lys Thr Gly Val Thr 1265	1270	1275	4500
gga gag cag atc tgg cta caa atc aac gag ccc acc ccg aat gac aaa Gly Glu Gln Ile Trp Leu Gln Ile Asn Glu Pro Thr Pro Asn Asp Lys 1280	1285	1290	4548
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cag agg ttg aaa caa gct gcc att gcc gag aaa aat cgt gcc cgg gtg Gln Arg Leu Lys Gln Ala Ala Ile Ala Glu Lys Asn Arg Ala Arg Val 1330	1335	1340	4692
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aat ctc act tgc aac gtg tgg gga gac ccg cct ccg gag gtg tcg tgg Asn Leu Thr Cys Asn Val Trp Gly Asp Pro Pro Glu Val Ser Trp 1360	1365	1370	4788
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gag acc agc gac ttc acc gtc agc gtg ttc atc cca gag gag gag gcg Glu Thr Ser Asp Phe Thr Val Ser Val Phe Ile Pro Glu Glu Ala 1430			4980

1425	1430	1435	
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Arg Met Ala Ala Leu Glu Ser Leu Lys Gly Gly Lys Lys Ala Lys *			
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900

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Leu Ile Gln Leu Ser Cys Asn Gly Asn Val Lys Ser Asp Lys Leu Arg			
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Ser Asp Lys Glu Lys Glu Asn Gly Lys Met Gly Cys Trp Ser Ile Glu			
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His Val Glu Gln Tyr Leu Gly Thr Asp Glu Leu Pro Lys Asn Asp Leu			
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Ile Thr Tyr Leu Gln Lys Asn Ala Asp Ala Ala Phe Leu Arg His Trp			
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Lys Leu Thr Gly Thr Asn Lys Ser Ile Arg Lys Asn Arg Asn Cys Ser			
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Gln Leu Ile Ala Ala Tyr Lys Asp Phe Cys Glu His Gly Thr Lys Ser			
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Gly Leu Asn Gln Gly Ala Ile Ser Thr Leu Gln Ser Ser Asp Ile Leu			
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Ser Cys Gly Val Glu Asp Val Leu Gln Leu Leu Arg Ile Leu Tyr Ile			
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Val Ala Ser Asp Pro Tyr Ser Arg Ile Ser Gln Glu Asp Gly Asp Glu			
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Thr Thr Lys Ile Leu Gln Ile Glu Glu Pro Leu Ala Leu Ala Ser			
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Val Glu Arg Thr Arg Thr Ser Ser Val Arg Arg Asp Asp Pro Gly			
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Glu Phe Arg Val Gly Arg Leu Lys His Glu Arg Val Lys. Val Pro Arg			
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Gly Glu Ser Leu Met Glu Trp Ala Glu Asn Val Met Gln Ile His Ala			
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Asp Arg Lys Ser Val Leu Glu Val Glu Phe Leu Gly Glu Glu Gly Thr			
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Gly Leu Gly Pro Thr Leu Glu Phe Tyr Ala Leu Val Ala Ala Glu Phe			
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Gln Arg Thr Asp Leu Gly Ala Trp Leu Cys Asp Asp Asn Phe Pro Asp			
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Asp Glu Ser Arg His Val Asp Leu Gly Gly Leu Lys Pro Pro Gly			
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tat tat gtg cag agg tca tgt gga ctg ttc aca gca cca ttt cca cag			6651
Tyr Tyr Val Gln Arg Ser Cys Gly Leu Phe Thr Ala Pro Phe Pro Gln			
640	645	650	
gat agt gat gag ctt gaa agg atc acg aaa ctg ttt cat ttc ctt gga			6699
Asp Ser Asp Glu Leu Glu Arg Ile Thr Lys Leu Phe His Phe Leu Gly			
655	660	665	
att ttc ttg gcc aaa tgc att caa gac aat aga ctt gtg gac tta cct			6747
Ile Phe Leu Ala Lys Cys Ile Gln Asp Asn Arg Leu Val Asp Leu Pro			
670	675	680	
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Ile Ser Lys Pro Phe Phe Lys Leu Met Cys Met Gly Asp Ile Lys Ser			
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Asn Met Ser Lys Leu Ile Tyr Glu Ser Arg Gly Asp Arg Asp Leu His			
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Cys Thr Glu Ser Gln Ser Glu Ala Ser Thr Glu Glu Gly His Asp Ser			
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Leu Ser Val Gly Ser Phe Glu Glu Asp Ser Lys Ser Glu Phe Ile Leu			
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Asp Pro Pro Lys Pro Lys Pro Ala Trp Phe Asn Gly Ile Leu Thr			
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 Lys Asn Pro Ser Gly Ser Gly Pro Pro Leu Ser Ile Glu Asp Leu Gly  
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Thr Met Glu Lys Gly Phe His Leu Asn \*  
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 Arg Thr Tyr Gln Glu Leu Leu Val Asn Gln Asn Pro Ile Ala Gln Pro  
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ctg ccc att gag gta tac tgc cat ctc cca gtc atg tgt gag gac cga Leu Pro Ile Glu Val Tyr Cys His Leu Pro Val Met Cys Glu Asp Arg	90	95	403
aat ttg ccc tat gtc tat atc ccc tct aag acg gac ctg ggt gca gcc Asn Leu Pro Tyr Val Tyr Ile Pro Ser Lys Thr Asp Leu Gly Ala Ala	105	110	451
gca ggc tcc aag cgc ccc acc tgt gtg ata atg gtc aag ccc cat gag Ala Gly Ser Lys Arg Pro Thr Cys Val Ile Met Val Lys Pro His Glu	120	125	499
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cag aag aag gaa gct gtt gct cct gtg caa gaa gaa tca gat ctt gaa Gln Lys Lys Glu Ala Val Ala Pro Val Gln Glu Glu Ser Asp Leu Glu 40 45 50	376
aaa aaa agg aga gaa gct gaa gca ttg ctt caa agc atg ggg cta act Lys Lys Arg Arg Glu Ala Glu Ala Leu Leu Gln Ser Met Gly Leu Thr 55 60 65 70	424
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gtg agc act cca agt gaa gct gga agc caa gac tct gga gat ggc gcc Val Ser Thr Pro Ser Glu Ala Gly Ser Gln Asp Ser Gly Asp Gly Ala 90 95 100	520
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ctt cac tca gat tcc gat ttg gga cga gga cct att aaa ctt gga atg Leu His Ser Asp Ser Asp Leu Gly Arg Gly Pro Ile Lys Leu Gly Met 120 125 130	616
gct aaa atc acg caa gtc gac ttt cct cct cga gaa att gtc acg tat Ala Lys Ile Thr Gln Val Asp Phe Pro Pro Arg Glu Ile Val Thr Tyr 135 140 145 150	664
aca aag gaa act cag act cca gtt atg gct caa ccc aaa gaa gat gaa Thr Lys Glu Thr Gln Thr Pro Val Met Ala Gln Pro Lys Glu Asp Glu 155 160 165	712
gag gaa gat gat gat gta gtg gct cct aaa cca cct att gaa cct gaa Glu Glu Asp Asp Asp Val Val Ala Pro Lys Pro Pro Ile Glu Pro Glu 170 175 180	760
gaa gag aaa act tta aag aaa gat gag gaa aat gat agt aaa gct ccc Glu Glu Lys Thr Leu Lys Asp Glu Glu Asn Asp Ser Lys Ala Pro 185 190 195	808
cct cat gag ctg act gaa gaa aag caa caa atc ttg cac tct gag Pro His Glu Leu Thr Glu Glu Lys Gln Gln Ile Leu His Ser Glu 200 205 210	856
gaa ttt tta agt ttc ttt gac cat tct aca aga att gta gaa aga gct Glu Phe Leu Ser Phe Asp His Ser Thr Arg Ile Val Glu Arg Ala 215 220 225 230	904
ctt tct gag cag att aac atc ttc ttt gac tat agt ggg aga gat ttg Leu Ser Glu Gln Ile Asn Ile Phe Phe Asp Tyr Ser Gly Arg Asp Leu 235 240 245	952
gaa gac aaa gaa gga gag att caa gca ggt gct aaa ctg tca tta aat Glu Asp Lys Glu Gly Glu Ile Gln Ala Gly Ala Lys Leu Ser Leu Asn 250 255 260	1000
cga caa ttt ttt gac gaa cgt tgg tca aag cat cgg gtg gtt agt tgt Arg Gln Phe Phe Asp Glu Arg Trp Ser Lys His Arg Val Val Ser Cys 265 270 275	1048
ttg gat tgg tca tct cag tat ccg gag tta ctc gtg gct tcc tat aac Leu Asp Trp Ser Ser Gln Tyr Pro Glu Leu Leu Val Ala Ser Tyr Asn 280 285 290	1096

aac aat gaa gat gcc cct cat gag cct gat ggt gtg gcc ctt gta tgg Asn Asn Glu Asp Ala Pro His Glu Pro Asp Gly Val Ala Leu Val Trp 295 300 305 310	1144
aat atg aaa tac aaa aaa act acc cca gag tat gtg ttt cac tgc cag Asn Met Lys Tyr Lys Lys Thr Thr Pro Glu Tyr Val Phe His Cys Gln 315 320 325	1192
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aca cac cct gta tat tgt gta aat gtt gtt gga aca caa aat gct cac Thr His Pro Val Tyr Cys Val Asn Val Val Gly Thr Gln Asn Ala His 375 380 385 390	1384
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gac tat gtt tat gat gtt atg tgg tca cct acc cac cca gcc ctg ttt Asp Tyr Val Tyr Asp Val Met Trp Ser Pro Thr His Pro Ala Leu Phe 520 525 530	1816
gcc tgt gtg gat ggc atg ggg aga ttg gat ttg tgg aat ctc aat aat Ala Cys Val Asp Gly Met Gly Arg Leu Asp Leu Trp Asn Leu Asn Asn 535 540 545 550	1864

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1

5

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10 15 20	
gag gaa aag aag aga aaa gaa gaa agg aaa aaa aaa gaa aca gac Glu Glu Lys Lys Arg Lys Glu Glu Glu Arg Lys Lys Glu Thr Asp	328
25 30 35	
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40 45 50	
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55 60 65 70	
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75 80 85	
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90 95 100	
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cag act cca gtt atg gct caa ccc aaa gaa gat gaa gag gaa gat gat Gln Thr Pro Val Met Ala Gln Pro Lys Glu Asp Glu Glu Glu Asp Asp	664
135 140 145 150	
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200 205 210	
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gcc cct cat gag cct gat ggt gtg gcc ctt gta tgg aat atg aaa tac Ala Pro His Glu Pro Asp Gly Val Ala Leu Val Trp Asn Met Lys Tyr 280	285	290	1096
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310			
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cca gtg caa aga act cca ctg tca gca gct gca cac aca cac cct gta Pro Val Gln Arg Thr Pro Leu Ser Ala Ala Ala His Thr His Pro Val 350	355	355	1288
360			
tat tgt gta aat gtt gtt gga aca caa aat gct cac aat ctg att agc Tyr Cys Val Asn Val Val Gly Thr Gln Asn Ala His Asn Leu Ile Ser 365	370	370	1336
375			
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cat cca cag gat agc atg gag ttg gtt cat aaa cag tca aaa gca gta His Pro Gln Asp Ser Met Glu Leu Val His Lys Gln Ser Lys Ala Val 400	405	405	1432
410			
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425			
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490			
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500			
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505

510

515

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535 540 545 550	
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555 560 565	
cag att gtt ata tac gat gtg gga gag cag att gct gtt ccc cgc aat Gln Ile Val Ile Tyr Asp Val Gly Glu Gln Ile Ala Val Pro Arg Asn	1960
570 575 580	
gat gaa tgg gca cgg ttt ggc cga aca ctt gca gaa att aat gca aac Asp Glu Trp Ala Arg Phe Gly Arg Thr Leu Ala Glu Ile Asn Ala Asn	2008
585 590 595	
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600 605 610	
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25   35   40	
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60   65   70	
aag ccc atg tct gag cgg gtg gca ggg cgt gca gga cta aag cca ccc Lys Pro Met Ser Glu Arg Val Ala Gly Arg Ala Gly Leu Lys Pro Pro	891
75   80   85	
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90   95   100	
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105   110   115   120	
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ccc act cg <sup>g</sup> ccc cgc aat gac cgc aat gtc ttc tct cgt ctc acc agt Pro Thr Arg Pro Arg Asn Asp Arg Asn Val Phe Ser Arg Leu Thr Ser 490 495 500	2139
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tgttgacttt caagtaaagt gattttttt aatttacata aaagtcttca gaaaggcctt ctatgaaaga attttaacct ataatgtaaa ggatgtattc tgagagaaca aagcagaatg aaacttgagt cacttactaa atatagtggataaaaaatag aacacctgac ttgccttta gaccataacc cccgaactta ctatgttcat atatttgtat tgaacaatct tttaaaagca aaaatgtaaa ttagtgttag tttatttgtt cttttattgt ttccctgcg tctcagacat gttggagaatc atggacaaaaa cctgctggaa ttttggatt tttgaagatg taaaataatgt gtatttatgt tataagtaac atatgtaaac atgtatattt gttttatatt tattttgtt acaccagtgt ctgtgaaac attttgc当地 atgcattttt taaaaaaaaata aatataatgt taagttacat tatcttttga ttcatatataaacttta tttttaaaata acttaccagt aaactcactt tttaaattttt gttgcctgtt gaggagccaa tttaaattttt aatattaatt ttgcaaatgt taaatacatt gtttctctat tatctgaaaaa aaaaaaaaa 3937	3349 3409 3469 3529 3589 3649 3709 3769 3829 3889 3937

<210> 512  
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<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (143) .. (346)

<400> 512 ttctttacca taggcgttgc ggaggcgtttc cggAACATCA cttggcccttc gctctcaactc gcggtcgcct ggccgttgc attgtttctc cgctgacact ttttcaagcc ccaggctggc tgcttcagaa gccccgtgacc cc atg gag gag tgg gac gtg cca cag atg aag Met Glu Glu Trp Asp Val Pro Gln Met Lys 1 . 5 10	60 120 172
aaa gag gtg gag agc ctt aag tac cag ctg gcc ttc cag cgg gag atg Lys Glu Val Glu Ser Leu Lys Tyr Gln Leu Ala Phe Gln Arg Glu Met 15 20 25	220
gcg tcc aag acc atc ccc gag ctg ctg aag tgg atc gag gac ggg atc Ala Ser Lys Thr Ile Pro Glu Leu Leu Lys Trp Ile Glu Asp Gly Ile 30 35 40	268
ccc aag gac ccc ttc ctg aac ccc gac ctg atg aag aac aac cca tgg	316

Pro	Lys	Asp	Pro	Phe	Leu	Asn	Pro	Asp	Leu	Met	Lys	Asn	Asn	Pro	Trp
45							50							55	

gtg gaa aag ggc aaa tgc acc atc ctg tga g ccccgacccc ggccctatc	367
Val Glu Lys Gly Lys Cys Thr Ile Leu *	
60	65

acaccatcct gtgagaccac gccgggtccc actctcacca tctttaaga atgtgccag	427
---	-----

gcccaactcaa ttcatgcttt gagttccat ttccagggtt atatttcat cattctgttg	487
--	-----

agctctatgt cggtgctatt tatattaatt tgtgagtttg	527
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<210> 513  
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<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)..(5856)

<400> 513			
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Met Asn Ala Leu Ala Ser Leu Gly Pro Gly Asp Arg Leu Ser Val Ala			
1	5	10	15

cag cgc ctg agc atc cac tta cag gac act cac ctg cag agg tac cct	96	
Gln Arg Leu Ser Ile His Leu Gln Asp Thr His Leu Gln Arg Tyr Pro		
20	25	30

gag cac cgt tgt ggg tta agg gac ttt ctc ccc tct gga aac agt cct	144	
Glu His Arg Cys Gly Leu Arg Asp Phe Leu Pro Ser Gly Asn Ser Pro		
35	40	45

gag aag ctg aag gtc ttg ggg gcc tct cac caa atg tct ttg gga gat	192	
Glu Lys Leu Lys Val Leu Gly Ala Ser His Gln Met Ser Leu Gly Asp		
50	55	60

gcc caa gag agc tgc tcc atg cgc tgt ggc gcc ctg gac agg cca tgt	240		
Ala Gln Glu Ser Cys Ser Met Arg Cys Gly Ala Leu Asp Arg Pro Cys			
65	70	75	80

tcc tgc cac ccg acg tgc tcc ggc ctt ggt acc tgc tgc ttg gat ttc	288	
Ser Cys His Pro Thr Cys Ser Gly Leu Gly Thr Cys Cys Leu Asp Phe		
85	90	95

cag gac ttc tgc ctg gag ata ttg ccc tac tca gtc tcc atg atg ggc	336	
Gln Asp Phe Cys Leu Glu Ile Leu Pro Tyr Ser Val Ser Met Met Gly		
100	105	110

ggc aag gac ttt gtg gtg cgg cac ttc aag atg tcc agc ccc aca gac	384	
Gly Lys Asp Phe Val Val Arg His Phe Lys Met Ser Ser Pro Thr Asp		
115	120	125

acc agc cca cag gtt tgc atg cca cag gag agc atc cag acc ctc ggc	432	
Thr Ser Pro Gln Val Cys Met Pro Gln Glu Ser Ile Gln Thr Leu Gly		
130	135	140

cat gtg gac tcc tcc ggg caa gtg cac ttc gtg tcg ccc ctg ctc tat	480
His Val Asp Ser Ser Gly Gln Val His Phe Val Ser Pro Leu Leu Tyr	

145	150	155	160	
gag agc ggc cac gtc ccc ttc acc atc tca ctg gac gat ggc cac tcc Glu Ser Gly His Val Pro Phe Thr Ile Ser Leu Asp. Asp. Gly His Ser				528
165	170		175	
tcc cct cgt gcg ggc act tgg ctg gct gtg cac ccc aac aaa gtg ttg Phe Pro Arg Ala Gly Thr Trp Leu Ala Val His Pro Asn Lys Val Leu				576
180	185		190	
atg aag gag aag agt gag ttg atg aac gag atg cat tgg caa tac tac Met Lys Glu Lys Ser Glu Leu Met Asn Glu Met His Trp Gln Tyr Tyr				624
195	200		205	
ggc acc gcc aac acc tca ggc aac ctc agc ctg acc tgg cac gtt gag Gly Thr Ala Asn Thr Ser Gly Asn Leu Ser Leu Thr Trp His Val Glu				672
210	215		220	
gcg ctg ccc aca cag aca cca tca agc tgt ggg gct atg agg aga cag Ala Leu Pro Thr Gln Thr Pro Ser Ser Cys Gly Ala Met Arg Arg Gln				720
225	230		235	
240				
gtg aga aag ctg gac cgg gag agg gta gga gct tgg tgg aga ggc gcc Val Arg Lys Leu Asp Arg Glu Arg Val Gly Ala Trp Trp Arg Gly Ala				768
245	250		255	
tgg gcc aga cat ccg cgg cag gag gcg ggg gaa cat gcc aag agg cgg Trp Ala Arg His Pro Arg Gln Glu Ala Gly Glu His Ala Lys Arg Arg				816
260	265		270	
aag ggg cac gcg gag acc ccc agg ggg cgc cgg aag ggg cgc gcc ggg Lys Gly His Ala Glu Thr Pro Arg Gly Arg Arg Lys Gly Arg Ala Gly				864
275	280		285	
cgg tcg gcg gcc gtt ggc gag ctg agg cct gcc agg cga agt ctg Arg Ser Ala Ala Ala Val Gly Glu Leu Arg Pro Ala Arg Arg Ser Leu				912
290	295		300	
gag acc agc cgg gcc gcg gca atg gcc aag gac tcg ccc agc ccc Glu Thr Ser Arg Ala Ala Ala Met Ala Lys Asp Ser Pro Ser Pro				960
305	310		315	
320				
ttg ggc gcg tcg ccc aag aag ccg ggc tgc tcc agc ccg cgc gca Leu Gly Ala Ser Pro Lys Lys Pro Gly Cys Ser Ser Pro Ala Ala Ala				1008
325	330		335	
gtg ctg gag aac cag agg cgg gag ctg gag aag cta cgg cgc gag ctg Val Leu Glu Asn Gln Arg Arg Glu Leu Glu Lys Leu Arg Ala Glu Leu				1056
340	345		350	
gag gcg gag cgg gca ggc tgg cgg gcg gaa cgg cgg cgc ttc gct gcc Glu Ala Glu Arg Ala Gly Trp Arg Ala Glu Arg Arg Arg Phe Ala Ala				1104
355	360		365	
cgg gag cgc cag ctg cgt gag gag gcc gag cgg gag cgg cga cag ctg Arg Glu Arg Gln Leu Arg Glu Ala Glu Arg Glu Arg Arg Gln Leu				1152
370	375		380	
gct gac cgt ctg cgc tcc aag tgg gag gca cag cgc agc cgg gag ttg Ala Asp Arg Leu Arg Ser Lys Trp Glu Ala Gln Arg Ser Arg Glu Leu				1200
385	390		395	
400				
cgx cag ctg caa gag gag atg cag cgg gaa cgc gag gcc gag atc cgg Arg Gln Leu Gln Glu Glu Met Gln Arg Glu Ala Glu Ile Arg				1248

405	410	415	
cag ctg ctg cgc tgg aag gag gcc gag cag cgg cag ctg cag cag ctg Gln Leu Leu Arg Trp Lys Glu Ala Glu Gln Arg Gln Leu Gln Gln Leu 420	425	430	1296
ctg cac cgg gag cgc gat ggc gtg gtg cgc caa gcc cgg gag ctg cag Leu His Arg Glu Arg Asp Gly Val Val Arg Gln Ala Arg Glu Leu Gln 435	440	445	1344
cgc cag ctg gcc gag gag ctg gtg aac cgc ggc cac tgt agc cgc cgc Arg Gln Leu Ala Glu Glu Leu Val Asn Arg Gly His Cys Ser Arg Pro 450	455	460	1392
ggg gcg tcc gag gtt tcc gcg gcg cag tgc cgc tgt cgc ctg cag gaa Gly Ala Ser Glu Val Ser Ala Ala Gln Cys Arg Cys Arg Leu Gln Glu 465	470	475	1440
gtg ttg gcg cag ctt cgc tgg cag act gac ggc gag cag gcg gcg cgc Val Leu Ala Gln Leu Arg Trp Gln Thr Asp Gly Glu Gln Ala Ala Arg 485	490	495	1488
atc cgc tat ctg cag gcg gcg ctg gag gtg gag cgc cag ctc ttc ctc Ile Arg Tyr Leu Gln Ala Ala Leu Glu Val Glu Arg Gln Leu Phe Leu 500	505	510	1536
aag tac atc ctg gcg cac ttc cgc ggg cac ccg gct ttg tcg gga tca Lys Tyr Ile Leu Ala His Phe Arg Gly His Pro Ala Leu Ser Gly Ser 515	520	525	1584
ccg gac ccc caa gct gtg cat tcc ttg gaa gaa ccg ctg ccc cag acc Pro Asp Pro Gln Ala Val His Ser Leu Glu Glu Pro Leu Pro Gln Thr 530	535	540	1632
tcc agc ggc tct tgc cac gcc ccc aaa ccc gcc tgc caa ctc gga tct Ser Ser Gly Ser Cys His Ala Pro Lys Pro Ala Cys Gln Leu Gly Ser 545	550	555	1680
cta gac agc ctg agt gct gaa gtc ggt gtg cgc tcc cgc tcg cta ggc Leu Asp Ser Leu Ser Ala Glu Val Gly Val Arg Ser Arg Ser Leu Gly 565	570	575	1728
ctg gtg tcc tct gcg tgc tcc agc tcc cca gac ggc ctg ctc tcc acg Leu Val Ser Ser Ala Cys Ser Ser Pro Asp Gly Leu Leu Ser Thr 580	585	590	1776
cac gcc agc tcc ctt gat tgc ttc gca cct gcc tgt tcc cgc tcg ctt His Ala Ser Ser Leu Asp Cys Phe Ala Pro Ala Cys Ser Arg Ser Leu 595	600	605	1824
gac agc acc cgg agc ctc ccc aag gcc tcc aaa tcc gag gag cgg ccc Asp Ser Thr Arg Ser Leu Pro Lys Ala Ser Lys Ser Glu Glu Arg Pro 610	615	620	1872
tcc tca cca gac acc tcc acc cct ggc tcc cgg agg ctc tcg ccg cca Ser Ser Pro Asp Thr Ser Thr Pro Gly Ser Arg Arg Leu Ser Pro Pro 625	630	635	1920
cca tcg cca ctc ccc cca cca cca ccg tca gcc cac agg aaa ctc Pro Ser Pro Leu Pro Pro Pro Pro Ser Ala His Arg Lys Leu 645	650	655	1968
agc aac ccg cgg gga gga gaa ggc tct gag agc cag ccc tgc gaa gtc Ser Asn Pro Arg Gly Gly Ser Glu Ser Gln Pro Cys Glu Val			2016

660	665	670	
ctg act ccc tca ccc ccg ggc ctg ggc cac cac gag ctg ata aag ctg Leu Thr Pro Ser Pro Pro Gly Leu Gly His His Glu Leu Ile Lys Leu 675	680	685	2064
aac tgg ctg ctg gcc aag gcg ttg tgg gtg ctg gcg cgc cgc tgt tat Asn Trp Leu Leu Ala Lys Ala Leu Trp Val Leu Ala Arg Arg Cys Tyr 690	695	700	2112
acc ctg caa gcg gag aac aag cag ctg cgg cgt gca ggc tgc ccc tac Thr Leu Gln Ala Glu Asn Lys Gln Leu Arg Arg Ala Gly Cys Pro Tyr 705	710	715	2160
cag gca gac gag aag gtg aag cgg ctc aag gta aag cgc gcg gag ctg Gln Ala Asp Glu Lys Val Lys Arg Leu Lys Val Lys Arg Ala Glu Leu 725	730	735	2208
acc ggg ctc gcg cgg cgc cta gct gac cgc gcc cgc aag ctg cag gag Thr Gly Leu Ala Arg Arg Leu Ala Asp Arg Ala Arg Lys Leu Gln Glu 740	745	750	2256
acc aac ctc cgg gcc gtg agc gcg cct ata ccc ggc gag agt tgc gcc Thr Asn Leu Arg Ala Val Ser Ala Pro Ile Pro Gly Glu Ser Cys Ala 755	760	765	2304
ggc ctg gag ctg tgc caa gtc ttt gcc cgc cag cgc gct cgg gac ctg Gly Leu Glu Leu Cys Gln Val Phe Ala Arg Gln Arg Ala Arg Asp Leu 770	775	780	2352
tgc gag cag gcg agc gcg ccc ctg gcc aag gac aag cag atc gaa gag Ser Glu Gln Ala Ser Ala Pro Leu Ala Lys Asp Lys Gln Ile Glu Glu 785	790	795	2400
ctg cgg cag gag tgc cac ctc ctg cag gcg cgt gtc gcc tcg ggt ccc Leu Arg Gln Glu Cys His Leu Leu Gln Ala Arg Val Ala Ser Gly Pro 805	810	815	2448
tgc agc gac ctg cat act gga agg ggc ggc ccc tgc acc cag tgg ctc Cys Ser Asp Leu His Thr Gly Arg Gly Pro Cys Thr Gln Trp Leu 820	825	830	2496
aac gtc aga gac tta gac cgc ctg cag cgc gag tcc cag cgg gaa gtg Asn Val Arg Asp Leu Asp Arg Leu Gln Arg Glu Ser Gln Arg Glu Val 835	840	845	2544
ctg cgc ctg cag agg cag ttg atg ctt cag cag ggc aac ggt ggc gct Leu Arg Leu Gln Arg Gln Met Leu Gln Gln Gly Asn Gly Gly Ala 850	855	860	2592
tgg ccc gag gcg ggc ggc cag agc gca acc tgc gag gag gtg cga cgg Trp Pro Glu Ala Gly Gly Gln Ser Ala Thr Cys Glu Glu Val Arg Arg 865	870	875	2640
cag atg ctg gcg ctg gag cgc gag ctg gac cag cgg cgg cgc gag tgc Gln Met Leu Ala Leu Glu Arg Glu Leu Asp Gln Arg Arg Arg Glu Cys 885	890	895	2688
cag gag ctg ggc gcg cag gcg gcc ccg gcg cgg cga cgt ggc gag gag Gln Glu Leu Gly Ala Gln Ala Ala Pro Ala Arg Arg Arg Gly Glu Glu 900	905	910	2736
gcc gag aca cag ctg cag gcg gcg ctg ctc aaa aac gcc tgg ctg gcg Ala Glu Thr Gln Leu Gln Ala Ala Pro Ala Arg Arg Arg Gly Glu Glu 920			2784

915	920	925	
gag gag aat ggg cgg ctg cag gcc aag acc gac tgg gtg cg <sup>g</sup> aag gtg Glu Glu Asn Gly Arg Leu Gln Ala Lys Thr Asp Trp Val Arg Lys Val			2832
930	935	940	
gag gct gag aat agc gaa gtg cgc ggc cac ctg ggc cgc g <sup>c</sup> g <sup>t</sup> caa Glu Ala Glu Asn Ser Glu Val Arg Gly His Leu Gly Arg Ala Cys Gln			2880
945	950	955	960
gag cgc gat gcc tcc ggc ttg atc gcc gaa cag ctg ctg cag c <sup>a</sup> g <sup>c</sup> g <sup>c</sup> Glu Arg Asp Ala Ser Gly Leu Ile Ala Glu Gln Leu Gln Gln Ala			2928
965	970	975	
g <sup>c</sup> g cgc ggg cag gac agg cag c <sup>a</sup> g <sup>c</sup> ctg caa cgc gac ccg c <sup>a</sup> g <sup>a</sup> Ala Arg Gly Gln Asp Arg Gln Gln Leu Gln Arg Asp Pro Gln Lys			2976
980	985	990	
gcc ctg tgt gac ctc cat cct tcc tgg aag gag ata cag g <sup>c</sup> g <sup>c</sup> ctc cag Ala Leu Cys Asp Leu His Pro Ser Trp Lys Glu Ile Gln Ala Leu Gln			3024
995	1000	1005	
tgt cgg cct ggt cac cct gaa cag ccc tgg gag acc agt caa atg Cys Arg Pro Gly His Pro Pro Glu Gln Pro Trp Glu Thr Ser Gln Met			3072
1010	1015	1020	
ccg gag tcc caa gtt aaa ggt agc aga agg ccc aag ttc cac gca cgg Pro Glu Ser Gln Val Lys Gly Ser Arg Arg Pro Lys Phe His Ala Arg			3120
1025	1030	1035	1040
cct gaa gac tac gca gtg tca cag ccc aac aga gac ata cag gag aaa Pro Glu Asp Tyr Ala Val Ser Gln Pro Asn Arg Asp Ile Gln Glu Lys			3168
1045	1050	1055	
agg gaa gcc tcc ctc gag gag agc cca gtt gcc ctt ggg gag tca gcc Arg Glu Ala Ser Leu Glu Ser Pro Val Ala Leu Gly Glu Ser Ala			3216
1060	1065	1070	
agt gtc ccc caa gtt tca gag aca gtc cct gcc agc caa cct ctg tcc Ser Val Pro Gln Val Ser Glu Thr Val Pro Ala Ser Gln Pro Leu Ser			3264
1075	1080	1085	
aag aaa acc agc tcc cag tca aac tcc tcc tct gag ggg tcg atg tgg Lys Lys Thr Ser Ser Gln Ser Asn Ser Ser Glu Gly Ser Met Trp			3312
1090	1095	1100	
gcc acc gtg ccg tcc tcc cct act ctg gac agg gac aca gcc agt gag Ala Thr Val Pro Ser Ser Pro Thr Leu Asp Arg Asp Thr Ala Ser Glu			3360
1105	1110	1115	1120
gtg gat gac ctg gag cct gac agc gtg tcc ctg gcc ctg gaa atg ggg Val Asp Asp Leu Glu Pro Asp Ser Val Ser Leu Ala Leu Glu Met Gly			3408
1125	1130	1135	
ggc tcg gcg gct cct gct gcc ccc aag ctc aag atc ttc atg gct cag Gly Ser Ala Ala Pro Ala Ala Pro Lys Leu Lys Ile Phe Met Ala Gln			3456
1140	1145	1150	
tat aac tac aac cca ttt gag ggg ccc aat gat cac cct gag ggt gag Tyr Asn Tyr Asn Pro Phe Glu Gly Pro Asn Asp His Pro Glu Gly Glu			3504
1155	1160	1165	
ctg ccc ctc aca gct ggg gac tac ata tat atc ttc ggg gac atg gat Leu Pro Leu Thr Ala Gly Asp Tyr Ile Tyr Ile Phe Gly Asp Met Asp			3552

1170	1175	1180	
gag gat ggc ttc tat gag ggg gag ctt gag gat ggc cgg cgg ggg ctg Glu Asp Gly Phe Tyr Glu Gly Glu Leu Glu Asp Gly Arg Arg Gly Leu			3600
1185	1190	1195	1200
gtg ccc tcc aac ttc gtg gag cag att ccg gac agc tac atc cca ggc Val Pro Ser Asn Phe Val Glu Gln Ile Pro Asp Ser Tyr Ile Pro Gly			3648
1205	1210	1215	
tgc ctg cct gcc aaa tcc cct gat ctt ggc ccc agt caa ctc cca gcg Cys Leu Pro Ala Lys Ser Pro Asp Leu Gly Pro Ser Gln Leu Pro Ala			3696
1220	1225	1230	
ggg cag gat gaa gct ctg gag gaa gac agc tta tta tct ggg aaa gcc Gly Gln Asp Glu Ala Leu Glu Asp Ser Leu Leu Ser Gly Lys Ala			3744
1235	1240	1245	
cag gga gtg gtg gac aga ggg ctg tgc cag atg gtc agg gtg ggc tcc Gln Gly Val Val Asp Arg Gly Leu Cys Gln Met Val Arg Val Gly Ser			3792
1250	1255	1260	
aag aca gaa gta gca aca gag atc ctg gat acc aag acg gaa gcc tgc Lys Thr Glu Val Ala Thr Glu Ile Leu Asp Thr Lys Thr Glu Ala Cys			3840
1265	1270	1275	1280
cag ctg ggc ttg ctg cag agc atg ggg aag cag ggc ctc tcc aga ccc Gln Leu Gly Leu Leu Gln Ser Met Gly Lys Gln Gly Leu Ser Arg Pro			3888
1285	1290	1295	
ctt ctg ggg acc aaa ggg gtg ctc cgt atg gct ccc atg cag cta cac Leu Leu Gly Thr Lys Gly Val Leu Arg Met Ala Pro Met Gln Leu His			3936
1300	1305	1310	
ctg cag aat gtc aca gcc aca tca gcc aac atc acc tgg gtc tac agc Leu Gln Asn Val Thr Ala Thr Ser Ala Asn Ile Thr Trp Val Tyr Ser			3984
1315	1320	1325	
agc cac cgc cac ccc cat gtg gta tat ctt gat gac cga gag cat gcc Ser His Arg His Pro His Val Val Tyr Leu Asp Asp Arg Glu His Ala			4032
1330	1335	1340	
ctg acc cca ggc gtg agc tgc tac acc ttc cag ggc ctg tgc ccc Leu Thr Pro Ala Gly Val Ser Cys Tyr Thr Phe Gln Gly Leu Cys Pro			4080
1345	1350	1355	1360
ggc acg cac tac cgg gcg cgg gtg gag gtg cgg ctg cca cgg gac ttg Gly Thr His Tyr Arg Ala Arg Val Glu Val Arg Leu Pro Arg Asp Leu			4128
1365	1370	1375	
ctg cag gtg tat tgg gga act atg tcc tcc acc gtc acc ttc gac aca Leu Gln Val Tyr Trp Gly Thr Met Ser Ser Thr Val Thr Phe Asp Thr			4176
1380	1385	1390	
ctc ttg gca gga cct ccc tac cca ccg ctg gat gtg ctg gtg gag cgc Leu Leu Ala Gly Pro Pro Tyr Pro Leu Asp Val Leu Val Glu Arg			4224
1395	1400	1405	
cat gcc tcg cca ggt gtc ctg gtg gtc agc tgg ctc cct gtg acc att His Ala Ser Pro Gly Val Leu Val Val Ser Trp Leu Pro Val Thr Ile			4272
1410	1415	1420	
gac tca gct ggg tcc tcc aat gga gtc cag gtc acc ggt tat gct gtg Asp Ser Ala Gly Ser Ser Asn Gly Val Gln Val Thr Gly Tyr Ala Val			4320

1425	1430	1435	1440	
tat gca gat ggg ctt aag gtt tgt gag gtc gcc gat gcc act gct ggg Tyr Ala Asp Gly Leu Lys Val Cys Glu Val Ala Asp Ala Thr Ala Gly				4368
1445		1450		1455
agc acc cta ttg gaa ttc tcc cag cta cag gtg ccc ctc acg tgg cag Ser Thr Leu Leu Glu Phe Ser Gln Leu Gln Val Pro Leu Thr Trp Gln				4416
1460		1465		1470
aag gtc tca gtg aga acc atg tca ctc tgt ggt gag tcc ctg gat tca Lys Val Ser Val Arg Thr Met Ser Leu Cys Gly Glu Ser Leu Asp Ser				4464
1475		1480		1485
gtg cct gct cag atc ccc gag gac ttc ttc atg tgt cac cga tgg cca Val Pro Ala Gln Ile Pro Glu Asp Phe Met Cys His Arg Trp Pro				4512
1490		1495		1500
gag act cca ccc ttt agc tac act tgt ggc gac cca tcc acc tac aga Glu Thr Pro Pro Phe Ser Tyr Thr Cys Gly Asp Pro Ser Thr Tyr Arg				4560
1505		1510		1515
gtc acc ttc ccc gtc tgc ccc cag aag ctg tca ctg gct cct ccg agt Val Thr Phe Pro Val Cys Pro Gln Lys Leu Ser Leu Ala Pro Pro Ser				4608
1525		1530		1535
gcc aag gcc agc ccc cac aac cct gga agc tgc ggg gag ccc cag gcc Ala Lys Ala Ser Pro His Asn Pro Gly Ser Cys Gly Glu Pro Gln Ala				4656
1540		1545		1550
aag ttc cta gaa gca ttc ttt gaa gaa ccc cca agg agg caa tcc cca Lys Phe Leu Glu Ala Phe Phe Glu Glu Pro Pro Arg Arg Gln Ser Pro				4704
1555		1560		1565
gtg tcc aac ctg ggc tca gaa gga gaa tgt ccg agt tca ggg gct ggc Val Ser Asn Leu Gly Ser Glu Gly Glu Cys Pro Ser Ser Gly Ala Gly				4752
1570		1575		1580
agc caa gcc cag gag ctt gca gag gcc tgg gag ggc tgt aga aag gac Ser Gln Ala Gln Glu Leu Ala Glu Ala Trp Glu Gly Cys Arg Lys Asp				4800
1585		1590		1595
ctg ctc ttt cag aag agt ccc cag aac cac agg cca cct tca gtc agt Leu Leu Phe Gln Lys Ser Pro Gln Asn His Arg Pro Pro Ser Val Ser				4848
1605		1610		1615
gac cag cct ggg gag aag gaa aat tgc tcc cag cac atg ggc acc agc Asp Gln Pro Gly Glu Lys Asn Cys Ser Gln His Met Gly Thr Ser				4896
1620		1625		1630
aaa agc cct gct cca gga ttc atc cat cta cgc acc gag tgt ggg ccc Lys Ser Pro Ala Pro Gly Phe Ile His Leu Arg Thr Glu Cys Gly Pro				4944
1635		1640		1645
agg aaa gaa ccg tgt cag gaa aag gct gcc ctt gag agg gta ctt cgg Arg Lys Glu Pro Cys Gln Glu Lys Ala Ala Leu Glu Arg Val Leu Arg				4992
1650		1655		1660
caa aag caa gat gcc caa ggg ttc aca cct ccc cag ctg ggc gcc agc Gln Lys Gln Asp Ala Gln Gly Phe Thr Pro Pro Gln Leu Gly Ala Ser				5040
1665		1670		1675
caa cag tat gca tct gac ttc cat aac gtt ttg aag gag gag cag gag Gln Gln Tyr Ala Ser Asp Phe His Asn Val Leu Lys Glu Glu Gln Glu				5088

1685	1690	1695	
gca ctg tgc ttg gat ctg tgg ggc aca gag agg cga gag gag agg agg Ala Leu Cys Leu Asp Leu Trp Gly Thr Glu Arg Arg Glu Glu Arg Arg			5136
1700	1705	1710	
gag cct gag ccc cac agc agg caa gga caa gct ctg ggg gtg aag aga Glu Pro Glu Pro His Ser Arg Gln Gln Ala Leu Gly Val Lys Arg			5184
1715	1720	1725	
ggg tgc cag ctc cat gag ccc agc tcg gca ctg tgt cca gct cca tcc Gly Cys Gln Leu His Glu Pro Ser Ser Ala Leu Cys Pro Ala Pro Ser			5232
1730	1735	1740	
gcc aaa gtc atc aag atg ccc agg ggt ggc ccc caa cag ctg ggg acg Ala Lys Val Ile Lys Met Pro Arg Gly Pro Gln Gln Leu Gly Thr			5280
1745	1750	1755	1760
ggg gcc aac act cca gcc agg gtc ttt gtg gcc ctc tct gat tac aac Gly Ala Asn Thr Pro Ala Arg Val Phe Val Ala Leu Ser Asp Tyr Asn			5328
1765	1770	1775	
ccc ctg gtg atg tct gcc aac ctc aag gct gca gag gag gag ctg gtc Pro Leu Val Met Ser Ala Asn Leu Lys Ala Ala Glu Glu Leu Val			5376
1780	1785	1790	
ttc cag aaa agg cag ttg cta aga gtg tgg ggc tct cag gac acc cat Phe Gln Lys Arg Gln Leu Leu Arg Val Trp Gly Ser Gln Asp Thr His			5424
1795	1800	1805	
gat ttc tac ctc agc gag tgc aac agg caa gtg ggc aat atc ccc ggg Asp Phe Tyr Leu Ser Glu Cys Asn Arg Gln Val Gly Asn Ile Pro Gly			5472
1810	1815	1820	
cgc cta gtg gct gag atg gag gtg ggg aca gag cag act gat agg agg Arg Leu Val Ala Glu Met Glu Val Gly Thr Glu Gln Thr Asp Arg Arg			5520
1825	1830	1835	1840
tgg cgt tct ccg gcc caa ggg cac ctg cct tct gtg gcc cac ctc gag Trp Arg Ser Pro Ala Gln Gly His Leu Pro Ser Val Ala His Leu Glu			5568
1845	1850	1855	
gac ttt cag ggg ctc acc atc ccc cag ggt tcc tcc ctg gtg ctc cag Asp Phe Gln Gly Leu Thr Ile Pro Gln Gly Ser Ser Leu Val Leu Gln			5616
1860	1865	1870	
ggg aac tcc aag aga ctc cca ctg tgg act cca aag atc atg ata gca Gly Asn Ser Lys Arg Leu Pro Leu Trp Thr Pro Lys Ile Met Ile Ala			5664
1875	1880	1885	
gct ctg gac tat gat cct ggg gat ggg caa atg ggg ggc cag ggg aag Ala Leu Asp Tyr Asp Pro Gly Asp Gly Gln Met Gly Gly Gln Gly Lys			5712
1890	1895	1900	
ggc agg ctg gcg ctg agg gca gga gac gtg gtc atg gtt tac ggg ccc Gly Arg Leu Ala Leu Arg Ala Gly Asp Val Val Met Val Tyr Gly Pro			5760
1905	1910	1915	1920
atg gat gac caa gga ttc tat tat gga gag ttg ggc ggc cac agg ggc Met Asp Asp Gln Gly Phe Tyr Tyr Gly Glu Leu Gly His Arg Gly			5808
1925	1930	1935	
ctg gtt cct gcc cac ctg ctg gat cac atg tcc ctc cat gga cac tga Leu Val Pro Ala His Leu Leu Asp His Met Ser Leu His Gly His *			5856

1940	1945	1950	
gcaaggcatcc ttggcccaggt agtggccctct ggctgctcac accctgccag aggagaagca			5916
agcgttcaga ccctcacacc agcaccccc ctcaccacca taagtagcat gtgctccaag			5976
tgccactgtg ttaaaactgat ggtagtcctt aagtgtcccc taggctctga aagtagcagg			6036
acttaaggcct gagttatttg caaaaagcaaa cacaacaagc caaccctga gagtctgaga			6096
agccatttca aagttgctga taactatggc aggtatacgg agaagcgcct ttttctgtgg			6156
ccaatgtgtg ttttctgtgg gaggttaagg ttatctgtcc attgccttgt acgaaaagtct			6216
caaqaaaaaqt ctacatctta aaaaaaaaaaa aa			6248

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<213> Homo sapiens
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<220>  
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<222> (204) . . (1265)

Pro Glu Ser His Val Leu Val Leu Met Lys Gly Leu Pro Gly Gly Asn		
110	115	120
gcc tct ctg ccc cg <sup>c</sup> cac ctg ggc atc tca ctt ctg agc tgc ttc ccg		614
Ala Ser Leu Pro Arg His Leu Gly Ile Ser Leu Leu Ser Cys Phe Pro		
125	130	135
aat gtc cag atg ctc ccg ctg gac ctg cg <sup>g</sup> gag ctg ttc ccg gac aca		662
Asn Val Gln Met Leu Pro Leu Asp Leu Arg Glu Leu Phe Arg Asp Thr		
140	145	150
ccc ctg gcc gac tgg tac gc <sup>g</sup> gcc gt <sup>g</sup> cag ggg cg <sup>c</sup> tgg gag ccc tac		710
Pro Leu Ala Asp Trp Tyr Ala Ala Val Gln Gly Arg Trp Glu Pro Tyr		
155	160	165
ctg ctg ccc gt <sup>g</sup> ctc tcc gac gcc tcc agg atc gca ctc atg tgg aag		758
Leu Leu Pro Val Leu Ser Asp Ala Ser Arg Ile Ala Leu Met Trp Lys		
170	175	180
ttc ggc ggc atc tac ctg gac acg gac ttc att gtt ctc aag aac ctg		806
Phe Gly Gly Ile Tyr Leu Asp Thr Asp Phe Ile Val Leu Lys Asn Leu		
190	195	200
cgg aac ctg acc aac gt <sup>g</sup> ctg gg <sup>c</sup> acc cag tcc cg <sup>c</sup> tac gtc ctc aac		854
Arg Asn Leu Thr Asn Val Leu Gly Thr Gln Ser Arg Tyr Val Leu Asn		
205	210	215
ggc gcg ttc ctg gcc ttc gag cg <sup>c</sup> cc <sup>g</sup> cac gag ttc atg g <sup>c</sup> ctg tgc		902
Gly Ala Phe Leu Ala Phe Glu Arg Arg His Glu Phe Met Ala Leu Cys		
220	225	230
atg cgg gac ttc gt <sup>g</sup> gac cac tac aac gg <sup>c</sup> tgg atc tgg ggt cac cag		950
Met Arg Asp Phe Val Asp His Tyr Asn Gly Trp Ile Trp Gly His Gln		
235	240	245
ggc ccg cag ctg ctc acg cg <sup>c</sup> gtc ttc aag aag tgg tgt tcc atc cg <sup>c</sup>		998
Gly Pro Gln Leu Leu Thr Arg Val Phe Lys Lys Trp Cys Ser Ile Arg		
250	255	260
agc ctg gcc gag agc cg <sup>c</sup> gcc tgc cg <sup>c</sup> gtc acc acc ctg ccc cct		1046
Ser Leu Ala Glu Ser Arg Ala Cys Arg Gly Val Thr Thr Leu Pro Pro		
270	275	280
gag gcc ttc tac ccc atc ccc tgg cag gac tgg aag aag tac ttt gag		1094
Glu Ala Phe Tyr Pro Ile Pro Trp Gln Asp Trp Lys Lys Tyr Phe Glu		
285	290	295
gac atc aac ccg gag gag ctg ccg cg <sup>c</sup> ctg ctc agt g <sup>c</sup> acc tat gct		1142
Asp Ile Asn Pro Glu Glu Leu Pro Arg Leu Leu Ser Ala Thr Tyr Ala		
300	305	310
gtc cac gt <sup>g</sup> tgg aac aag aag agc cag gg <sup>c</sup> acg cg <sup>c</sup> ttc gag g <sup>c</sup> acg		1190
Val His Val Trp Asn Lys Lys Ser Gln Gly Thr Arg Phe Glu Ala Thr		
315	320	325
tcc agg gca ctg ctg gcc cag ctg cat gcc cg <sup>c</sup> tac tgc ccc acg acg		1238
Ser Arg Ala Leu Leu Ala Gln Leu His Ala Arg Tyr Cys Pro Thr Thr		
330	335	340
cac gag gcc atg aaa atg tac ttg tga		1265
His Glu Ala Met Lys Met Tyr Leu *		
350		

<210> 515  
 <211> 1825  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)...(1584)

<400> 515

atg gca aag gtc att ctg aag cag agt aaa caa tgc aag aat ctg ctt	48		
Met Ala Lys Val Ile Leu Lys Gln Ser Lys Gln Cys Lys Asn Leu Leu			
1	5	10	15

acc tgc aaa gtg gcc cag gtc ccc gta tgt ggc tgt ctt cat tgt

Thr Cys Lys Val Ala Gln Val Cys Pro Val Cys Gly Cys Leu His Cys	96		
20	25	30	

tat ttc tgg tgg ctc tca ggt ctt gag tca aga cgt ccc agc tct cca

Tyr Phe Trp Trp Leu Ser Gly Leu Glu Ser Arg Arg Pro Ser Ser Pro	144		
35	40	45	

ctc atc gat att aaa ccc atc gag ttt ggc gtt ctc agc gcc aag aag

Leu Ile Asp Ile Lys Pro Ile Glu Phe Gly Val Leu Ser Ala Lys Lys	192		
50	55	60	

gag ccc atc caa cct tcg gtc ctc aga cgg acc tat aac ccc gac gac

Glu Pro Ile Gln Pro Ser Val Leu Arg Arg Thr Tyr Asn Pro Asp Asp	240		
65	70	75	80

tat ttc agg aag ttc gaa ccc cac ctg tac tcc ctc gac tcc aac agc

Tyr Phe Arg Lys Phe Glu Pro His Leu Tyr Ser Leu Asp Ser Asn Ser	288		
85	90	95	

gac gat gtg gac tct ctg aca gac gag gag atc ctg tcc aag tac cag

Asp Asp Val Asp Ser Leu Thr Asp Glu Glu Ile Leu Ser Lys Tyr Gln	336		
100	105	110	

ctg ggc atg ctg cac ttc agc act cag tac gac ctg ctg cac aac cac

Leu Gly Met Leu His Phe Ser Thr Gln Tyr Asp Leu Leu His Asn His	384		
115	120	125	

ctc acc gtg cgc gtg atc gag gcc agg gac ctg cca cct ccc atc tcc

Leu Thr Val Arg Val Ile Glu Ala Arg Asp Leu Pro Pro Pro Ile Ser	432		
130	135	140	

cac gat ggc tcg cgc cag gac atg gcg cac tcc aac ccc tac gtc aag

His Asp Gly Ser Arg Gln Asp Met Ala His Ser Asn Pro Tyr Val Lys	480		
145	150	155	160

atc tgt ctc ctg cca gac cag aag aac tca aag cag acc ggg gtc aaa

Ile Cys Leu Leu Pro Asp Gln Lys Asn Ser Lys Gln Thr Gly Val Lys	528		
165	170	175	

cgc aag acc cag aag ccc gtg ttt gag gag cgc tac acc ttc gag atc

Arg Lys Thr Gln Lys Pro Val Phe Glu Glu Arg Tyr Thr Phe Glu Ile	576		
180	185	190	

ccc ttc ctg gag gcc cag agg acc ctg ctc ctg acc gtg gtg gat

Pro Phe Leu Glu Ala Gln Arg Arg Thr Leu Leu Leu Thr Val Val Asp	624		
195	200	205	

ttt gat aag ttc tcc cgc cac tgt gtc att ggg aaa gtt tct gtg cct Phe Asp Lys Phe Ser Arg His Cys Val Ile Gly Lys Val Ser Val Pro 210 215 220	672
ttg tgt gaa gtt gac ctg gtc aag ggc ggg cac tgg tgg aag ggc cat Leu Cys Glu Val Asp Leu Val Lys Gly Gly His Trp Trp Lys Ala His 225 230 235 240	720
gat tcc cag ttc tca gca cca ggc ttg ccc gcc gat caa caa ttt ttc Asp Ser Gln Phe Ser Ala Pro Gly Leu Pro Ala Asp Gln Gln Phe Phe 245 250 255	768
gcc gat ctg ttc agc ggc ctg gtg ctt aac ccg caa cta ctg ggg cgc Ala Asp Leu Phe Ser Gly Leu Val Leu Asn Pro Gln Leu Leu Gly Arg 260 265 270	816
gtc tgg ttt gcc agc cag cct gcc tcg ttg ccg gtg ggc agt tta tgt Val Trp Phe Ala Ser Gln Pro Ala Ser Leu Pro Val Gly Ser Leu Cys 275 280 285	864
att gat ttt ccc cgt ctg gat atc gtg ctg cgc ggc gaa tac ggc aat Ile Asp Phe Pro Arg Leu Asp Ile Val Leu Arg Gly Glu Tyr Gly Asn 290 295 300	912
ctg ctg gaa gca aag cag caa cgt ttg gtg gaa gga gaa atg ctg ttt Leu Leu Glu Ala Lys Gln Gln Arg Leu Val Glu Gly Glu Met Leu Phe 305 310 315 320	960
att ccg gcg cgc gcg gct aat tta ccg gtc aac aac aaa ccg gtg atg Ile Pro Ala Arg Ala Ala Asn Leu Pro Val Asn Asn Lys Pro Val Met 325 330 335	1008
ctg tta agc ctg gtg ttc gct ccg acc ttg ctt ggg tta tcg ttt tac Leu Leu Ser Leu Val Phe Ala Pro Thr Trp Leu Gly Leu Ser Phe Tyr 340 345 350	1056
gat agc cgc acc acg tcg ttg ttg cat cct gct cgc cag atc cag ctt Asp Ser Arg Thr Thr Ser Leu Leu His Pro Ala Arg Gln Ile Gln Leu 355 360 365	1104
ccc agc ctg caa cgc ggt gaa ggt gaa gcg atg ctt acc gcc ctc acc Pro Ser Leu Gln Arg Gly Glu Gly Ala Met Leu Thr Ala Leu Thr 370 375 380	1152
cat ctt agc cgt tcg ccg ctg gag caa aat atc att cag ccg ctg gtg His Leu Ser Arg Ser Pro Leu Glu Gln Asn Ile Ile Gln Pro Leu Val 385 390 395 400	1200
tta agt ttg ctg cat ctt tgc cgt agc gtg gtg aat atg ccg ccg ggc Leu Ser Leu Leu His Leu Cys Arg Ser Val Val Asn Met Pro Pro Gly 405 410 415	1248
aat tcg cag ccg cgc ggc gat ttt ctc tat cac agc att tgt aac tgg Asn Ser Gln Pro Arg Gly Asp Phe Leu Tyr His Ser Ile Cys Asn Trp 420 425 430	1296
gtt cag gat aat tat gcc cag ccg ctc acc cgc gag agc gtg ggc cag Val Gln Asp Asn Tyr Ala Gln Pro Leu Thr Arg Glu Ser Val Ala Gln 435 440 445	1344
ttt ttt aat atc acg ccc aat cat ctg tca aaa ctg ttt gct cag cat Phe Phe Asn Ile Thr Pro Asn His Leu Ser Lys Leu Phe Ala Gln His 450 455 460	1392

gga acg atg cgt ttt atc gag tat gtg cgt tgg gtg cga atg gcg aag Gly Thr Met Arg Phe Ile Glu Tyr Val Arg Trp Val Arg Met Ala Lys 465	470	475	480	1440
gcg agg atg att ttg cag aaa tat cat ctg tca att cat gaa gtg gca Ala Arg Met Ile Leu Gln Lys Tyr His Leu Ser Ile His Glu Val Ala 485	490		495	1488
cag cgt tgc ggt ttt ccg gat agc gac tat ttt tgt cgc gtt ttc cgg Gln Arg Cys Gly Phe Pro Asp Ser Asp Tyr Phe Cys Arg Val Phe Arg 500	505		510	1536
cgt cag ttt ggt ctg acg ccg gga gag tac agc gcc cgt ttt cag ggc Arg Gln Phe Gly Leu Thr Pro Gly Glu Tyr Ser Ala Arg Phe Gln Gly 515	520		525	1584
taacgtcaga aggttaattc tgtttccagc agcgtcagga tacttgtgc atcttgcgcg gcaaaacaacg actggcgaa gtttttattc accagttac gcgccagctg cgagaagact ttcacatgat tcatcccttc gtttagcaccc agcgtcagca tgatcaccag ttcgacttcg cccatttctg actgccagcc aatcggttc gccagccggg caatgctgat actggaatga c				1644
				1704
				1764
				1824
				1825

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<211> 4880  
<212> DNA  
<213> Homo sapiens

<220>  
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<222> (225)..(3248)

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aag cag cgg aaa ccc caa cag tta atc tcg gac tgc gaa ggt ccc agc Lys Gln Arg Lys Pro Gln Gln Leu Ile Ser Asp Cys Glu Gly Pro Ser 5	10	15	20	284
gcg tct gag aac ggt gat gct agc gag gag gat cac ccc caa gtc tgt Ala Ser Glu Asn Gly Asp Ala Ser Glu Glu Asp His Pro Gln Val Cys 25	30		35	332
gcc aag tgc tgc gca caa ttc act gac cca act gaa ttc ctc gcc cac Ala Lys Cys Cys Ala Gln Phe Thr Asp Pro Thr Glu Phe Leu Ala His 40	45		50	380
cag aac gca tgt tct act gac cct cct gta atg gtg ata att ggg ggc Gln Asn Ala Cys Ser Thr Asp Pro Pro Val Met Val Ile Ile Gly Gly				428

55	60	65	
cag gag aac ccc aac aac tct tcg gcc tcc tct gaa ccc cgg cct gag Gln Glu Asn Pro Asn Asn Ser Ser Ala Ser Ser Glu Pro Arg Pro Glu 70	75	80	476
ggt cac aat aat cct cag gtc atg gac aca gag cat agc aac ccc cca Gly His Asn Asn Pro Gln Val Met Asp Thr Glu His Ser Asn Pro Pro 85	90	95	524
gat tct ggg tcc tcc gtg ccc acg gat ccc acc tgg ggc cca gag agg Asp Ser Gly Ser Ser Val Pro Thr Asp Pro Thr Trp Gly Pro Glu Arg 105	110	115	572
aga gga gag gag tct tca ggg cat ttc ctg gtc gct gcc aca ggt aca Arg Gly Glu Ser Ser Gly His Phe Leu Val Ala Ala Thr Gly Thr 120	125	130	620
gcg gct ggg gga ggc ggg ggc ctg atc ttg gcc agt ccc aag ctg gga Ala Ala Gly Gly Gly Gly Ile Leu Ala Ser Pro Lys Leu Gly 135	140	145	668
gca acc cca tta cct cca gaa tcg acc cct gca ccc cct cct cca Ala Thr Pro Leu Pro Pro Glu Ser Thr Pro Ala Pro Pro Pro Pro 150	155	160	716
cca ccc cct ccg ccc cca ggg gta ggc agt ggc cac ttg aat atc ccc Pro Pro Pro Pro Pro Pro Gly Val Gly Ser Gly His Leu Asn Ile Pro 165	170	175	764
ctg atc ttg gaa gag cta cgg gtg ctg cag cag cgg cag atc cat cag Leu Ile Leu Glu Glu Leu Arg Val Leu Gln Gln Arg Gln Ile His Gln 185	190	195	812
atg cag atg act gag caa atc tgc agg cag gtg ctg ttg ctt ggc tcc Met Gln Met Thr Glu Gln Ile Cys Arg Gln Val Leu Leu Leu Gly Ser 200	205	210	860
tta ggc cag acg gtg ggt gcc cct gcc agt ccc tca gag cta cct ggg Leu Gly Gln Thr Val Gly Ala Pro Ala Ser Pro Ser Glu Leu Pro Gly 215	220	225	908
aca ggg act gcc tct tcc acc aag ccc cta cta ccc ctc ttc agc ccc Thr Gly Thr Ala Ser Ser Thr Lys Pro Leu Leu Pro Leu Phe Ser Pro 230	235	240	956
atc aag cct gtc caa acc agc aag aca ctg gca tct tcc tcc tcc Ile Lys Pro Val Gln Thr Ser Lys Thr Leu Ala Ser Ser Ser Ser 245	250	255	1004
tcc tct tcc tct tca ggg gca gaa acg ccc aag cag gcc ttc ttc cac Ser Ser Ser Ser Gly Ala Glu Thr Pro Lys Gln Ala Phe Phe His 265	270	275	1052
ctt tac cac cca ctg ggg tca cag cat cct ttc tct gct gga ggg gtt Leu Tyr His Pro Leu Gly Ser Gln His Pro Phe Ser Ala Gly Gly Val 280	285	290	1100
ggg cga agc cac aaa ccc acc cct gcc cct tcc cca gcc ttg cca ggc Gly Arg Ser His Lys Pro Thr Pro Ala Pro Ser Pro Ala Leu Pro Gly 295	300	305	1148
agc aca gat cag ctg att gcc tcg cct cat ctg gca ttc cca agc acc Ser Thr Asp Gln Leu Ile Ala Ser Pro His Leu Ala Phe Pro Ser Thr			1196

310	315	320	
acg gga cta ctg gca gca cag tgt ctt ggg gca gcc cga ggc ctt gag Thr Gly Leu Leu Ala Ala Gln Cys Leu Gly Ala Ala Arg Gly Leu Glu 325	330	335	1244 340
gcc act gcc tcc cca ggg ctc ctg aag cca aag aat gga agt ggt gag Ala Thr Ala Ser Pro Gly Leu Leu Lys Pro Lys Asn Gly Ser Gly Glu 345	350	355	1292
ctg agc tac gga gaa gtg atg ggt ccc ttg gag aag cct ggt gga agg Leu Ser Tyr Gly Glu Val Met Gly Pro Leu Glu Lys Pro Gly Gly Arg 360	365	370	1340
cac aaa tgc cgc ttc tgt gcc aaa gta ttt ggc agt gac agt gcc ctg His Lys Cys Arg Phe Cys Ala Lys Val Phe Gly Ser Asp Ser Ala Leu 375	380	385	1388
cag atc cac ctt cgt tcc cac acg ggt gag agg ccc tat aag tgc aat Gln Ile His Leu Arg Ser His Thr Gly Glu Arg Pro Tyr Lys Cys Asn 390	395	400	1436
gtc tgt gga aac cgt ttt acc acc cgt ggc aac ctc aaa gtg cat ttc Val Cys Gly Asn Arg Phe Thr Arg Gly Asn Leu Lys Val His Phe 405	410	415	1484 420
cac cgg cat cgt gag aag tac cca cat gtg cag atg aac cca cac cca His Arg His Arg Glu Lys Tyr Pro His Val Gln Met Asn Pro His Pro 425	430	435	1532
gta cca gag cac cta gac tat gtc att acc agc agt ggc ttg cct tat Val Pro Glu His Leu Asp Tyr Val Ile Thr Ser Ser Gly Leu Pro Tyr 440	445	450	1580
ggg atg tcc gtg cca cca gag aag gcc gag gag gca gcc act cca Gly Met Ser Val Pro Pro Glu Lys Ala Glu Glu Ala Ala Thr Pro 455	460	465	1628
ggg gga ggg gtt gag cgc aag cct ctg gtg gcc tcc aca aca gca ctc Gly Gly Val Glu Arg Lys Pro Leu Val Ala Ser Thr Thr Ala Leu 470	475	480	1676
agt gcc aca gag agc ctg act ctg ctc tcc acc agt gca ggc aca gcc Ser Ala Thr Glu Ser Leu Thr Leu Leu Ser Thr Ser Ala Gly Thr Ala 485	490	495	1724 500
acg gct cca gga ctc cct gct ttc aat aag ttt gtg ctc atg aaa gca Thr Ala Pro Gly Leu Pro Ala Phe Asn Lys Phe Val Leu Met Lys Ala 505	510	515	1772
gtg gaa ccc aag aat aaa gct gat gaa aac acc ccc cca ggg agt gag Val Glu Pro Lys Asn Lys Ala Asp Glu Asn Thr Pro Pro Gly Ser Glu 520	525	530	1820
ggc tca gcc atc agt gga gtg gca gaa agt agc acg gca act ctc atg Gly Ser Ala Ile Ser Gly Val Ala Glu Ser Ser Thr Ala Thr Leu Met 535	540	545	1868
caa cta agt aag ttg atg act tca cta cca agc tgg gca ctg ctt acc Gln Leu Ser Lys Leu Met Thr Ser Leu Pro Ser Trp Ala Leu Leu Thr 550	555	560	1916
aac cac ttc aag tcc act ggc agc ttc ccg ctt ccc cta tgt gct aga Asn His Phe Lys Ser Thr Gly Ser Phe Pro Leu Pro Leu Cys Ala Arg			1964

565	570	575	580	
gcc ttg ggg gcc tca ccc tct gag aca tca aag ctg cag caa ctg gta Ala Leu Gly Ala Ser Pro Ser Glu Thr Ser Lys Leu Gln Gln Leu Val				2012
585		590	595	
gaa aag att gac cgg caa gga gct gtg gcg gtg acc tca gct gcc tca Glu Lys Ile Asp Arg Gln Gly Ala Val Ala Val Thr Ser Ala Ala Ser				2060
600		605	610	
gga gcc ccc acc acc tct gcc cct gca cct tca tcc tca gcc tct tct Gly Ala Pro Thr Thr Ser Ala Pro Ala Pro Ser Ser Ala Ser Ser				2108
615		620	625	
gga cct aac cag tgt gtc atc tgt ctc cga gtg ctt agc tgt cct cgg Gly Pro Asn Gln Cys Val Ile Cys Leu Arg Val Leu Ser Cys Pro Arg				2156
630		635	640	
gcc cta cgc ctt cat tat ggc caa cat gga ggt gag agg ccc ttc aaa Ala Leu Arg Leu His Tyr Gly Gln His Gly Glu Arg Pro Phe Lys				2204
645		650	655	660
tgc aaa gtg tgt ggc aga gcc ttc tcc acc agg ggt aat ctg cgt gca Cys Lys Val Cys Gly Arg Ala Phe Ser Thr Arg Gly Asn Leu Arg Ala				2252
665		670	675	
cat ttc gtg ggc cac aag gcc agt cca gct gcc cgg gca cag aat tcc His Phe Val Gly His Lys Ala Ser Pro Ala Ala Arg Ala Gln Asn Ser				2300
680		685	690	
tgc ccc atc tgc cag aag aag ttc acc aat gct gtc act ctg cag cag Cys Pro Ile Cys Gln Lys Phe Thr Asn Ala Val Thr Leu Gln Gln				2348
695		700	705	
cat gtc cgg atg cac ctg ggg ggc cag atc ccc aac ggt ggt act gca His Val Arg Met His Leu Gly Gly Gln Ile Pro Asn Gly Gly Thr Ala				2396
710		715	720	
ctc cct gaa ggt gga gga gct gct cag gag aat ggc tcc gag caa tct Leu Pro Glu Gly Gly Ala Ala Gln Glu Asn Gly Ser Glu Gln Ser				2444
725		730	735	740
aca gtc tcc gga gca ggg agt ttc ccc cag cag cag tcc cag cag cca Thr Val Ser Gly Ala Gly Ser Phe Pro Gln Gln Ser Gln Gln Pro				2492
745		750	755	
tca ccg gaa gag gag ttg tct gag gag gag gaa gag gag gat gag gaa Ser Pro Glu Glu Glu Leu Ser Glu Glu Glu Glu Glu Asp Glu Glu				2540
760		765	770	
gaa gag gaa gat gtg act gat gaa gat tcc ctg gca ggg aga ggc tca Glu Glu Glu Asp Val Thr Asp Glu Asp Ser Leu Ala Gly Arg Gly Ser				2588
775		780	785	
gag agt gga ggt gag aag gca ata tca gtg aga ggt gat tca gaa gag Glu Ser Gly Gly Glu Lys Ala Ile Ser Val Arg Gly Asp Ser Glu Glu				2636
790		795	800	
gca tct ggg gca gag gag gag gtg ggg aca gtg gcg gca gca gcc aca Ala Ser Gly Ala Glu Glu Val Gly Thr Val Ala Ala Ala Ala Thr				2684
805		810	815	820
gct ggg aag gag atg gac agt aat gag aaa act act caa cag tct tct Ala Gly Lys Glu Met Asp Ser Asn Glu Lys Thr Thr Gln Gln Ser Ser				2732

825	830	835	
ttg cca cca cca cca cct gac agc ctg gat cag cct cag cca atg Leu Pro Pro Pro Pro Pro Asp Ser Leu Asp Gln Pro Gln Pro Met			2780
840	845	850	
gag cag gga agc agt ggt gtt tta gga ggc aag gaa gag ggg ggc aaa Glu Gln Gly Ser Ser Gly Val Leu Gly Gly Lys Glu Gly Gly Lys			2828
855	860	865	
ccg gag aga agc tca agt ccg gca tca gca ctc acc cca gaa ggg gaa Pro Glu Arg Ser Ser Pro Ala Ser Ala Leu Thr Pro Glu Gly Glu			2876
870	875	880	
gcc acc agc gtg acc ttg gta gag gag ctg agc ctg cag gag gca atg Ala Thr Ser Val Thr Leu Val Glu Glu Leu Ser Leu Gln Glu Ala Met			2924
885	890	895	900
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His	Lys	Pro	Glu	Lys	Ala	Phe	Gln	Gln	Ser	Val	Glu	Gln	Asp	Asn	Leu	
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Phe	Asp	Ile	Ser	Thr	Glu	Glu	Gly	Ser	Thr	Lys	Arg	Lys	Ser	Gln		
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acg gag atc gag aag gcc cgt gcc gtg gct gag agg gcc ctt aag acc Thr Glu Ile Glu Lys Ala Arg Ala Val Ala Glu Arg Ala Leu Lys Thr 1650 1655 1660	4991
atc tcc ttc aga gag gag cag gag aag ctg aac gtg tgg gtg gct ctg Ile Ser Phe Arg Glu Glu Gln Glu Lys Leu Asn Val Trp Val Ala Leu 1665 1670 1675	5039
ctg aac ctg gag aac atg tac ggc tct cag gag tcc ctg acc aag gtc Leu Asn Leu Glu Asn Met Tyr Gly Ser Gln Glu Ser Leu Thr Lys Val 1680 1685 1690	5087
ttt gag cga gcc gtg cag tac aac gag cct ctc aaa gtc ttt ctc cac Phe Glu Arg Ala Val Gln Tyr Asn Glu Pro Leu Lys Val Phe Leu His 1695 1700 1705 1710	5135
ctg gct gac atc tac gcc aag tca gag aaa ttc cag gaa gct ggt gaa Leu Ala Asp Ile Tyr Ala Lys Ser Glu Lys Phe Gln Glu Ala Gly Glu 1715 1720 1725	5183
ctc tac aac cgg atg ctg aag cgt ttc cgg cag gag aaa gct gtg tgg Leu Tyr Asn Arg Met Leu Lys Arg Phe Arg Gln Glu Lys Ala Val Trp 1730 1735 1740	5231
atc aaa tac ggc gcc ttc ctt ctg cgg agg agc cag gct gca gcc agt Ile Lys Tyr Gly Ala Phe Leu Leu Arg Arg Ser Gln Ala Ala Ala Ser 1745 1750 1755	5279
cac cgc gtg ctg cag cga gcc ctg gag tgc ctg cct agc aag gag cat His Arg Val Leu Gln Arg Ala Leu Glu Cys Leu Pro Ser Lys Glu His 1760 1765 1770	5327
gtg gat gtc att gcc aag ttt gcc cag ctt gag ttt cag ctg ggg gat Val Asp Val Ile Ala Lys Phe Ala Gln Leu Glu Phe Gln Leu Gly Asp 1775 1780 1785 1790	5375
gca gag cgg gcc aaa gcc att ttt gag aac acg ctg agc acc tac cca Ala Glu Arg Ala Ile Phe Glu Asn Thr Leu Ser Thr Tyr Pro 1795 1800 1805	5423
aag cgc aca gat gtc tgg tcg gtc tat atc gac atg acc atc aag cac Lys Arg Thr Asp Val Trp Ser Val Tyr Ile Asp Met Thr Ile Lys His 1810 1815 1820	5471
ggc agc cag aag gac gtc cgg gac atc ttt gag cgg gtc att cat ctg Gly Ser Gln Lys Asp Val Arg Asp Ile Phe Glu Arg Val Ile His Leu 1825 1830 1835	5519
agc ttg gcc ccc aag aga atg aag ttc ttc aag cgc tac ctg gac Ser Leu Ala Pro Lys Arg Met Lys Phe Phe Lys Arg Tyr Leu Asp 1840 1845 1850	5567

tac gag aag cag cat ggc act gag aag gat gtg cag gca gtc aag gcc	5615
Tyr Glu Lys Gln His Gly Thr Glu Lys Asp Val Gln Ala Val Lys Ala	
1855 1860 1865 1870	
aag gcc ctg gag tat gtg gag gcc aag agc tca gtg cta gag gac tag	5663
Lys Ala Leu Glu Tyr Val Glu Ala Lys Ser Ser Val Leu Glu Asp *	
1875 1880 1885	
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cctgggcact cgaaaaactg ttacctcagg actctattta aatgctgtt tttctgcagc	5783
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<212> DNA  
<213> *Homo sapiens*

<220>  
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<222> (1121) .. (2197)

<400> 518

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gagctgcctt agactatcca attgatctat tcaaacagct gcctgttccc ttaacttgtc	360
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ttttggcttg ctccagcaaa agagaagccc atgcaaggct cctgctgacc atgtttcatt	480

tctagtttg atgtctgggc actgattcc ctagattaa ctatgtgctc aatggtaagg	540
cagtctgtg gaaatctgtc tgtgtactg gggtgctatg caggcctgtc tgggtgactg	600
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gaagtcaccc ggagacaatg ctgagtgttc caccctgag tcgaagccca gcccaggggca	1020
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ggggatgttag acggcagcgg cgccagtcgc tcctggcacc atg gac gat gcc aca Met Asp Asp Ala Thr	1135
1 5	
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10 15 20	
tcc tac gca aaa gtc aaa tct gcc tac tct gag cgc ctc aag ttc aat Ser Tyr Ala Lys Val Lys Ser Ala Tyr Ser Glu Arg Leu Lys Phe Asn	1231
25 30 35	
gtg gct gtc aag atc atc gac cgc aag aaa aca cct act gac ttt gtg Val Ala Val Lys Ile Ile Asp Arg Lys Lys Thr Pro Thr Asp Phe Val	1279
40 45 50	
gag aga ttc ctt cct cgg gag atg gac atc ctg gca act gtc aac cac Glu Arg Phe Leu Pro Arg Glu Met Asp Ile Leu Ala Thr Val Asn His	1327
55 60 65	
ggc tcc atc atc aag act tac gag atc ttt gag acc tct gac gga cgg Gly Ser Ile Ile Lys Thr Tyr Glu Ile Phe Glu Thr Ser Asp Gly Arg	1375
70 75 80 85	
atc tac atc atc atg gag ctt ggc gtc cag ggc gac ctc ctc gag ttc Ile Tyr Ile Ile Met Glu Leu Gly Val Gln Gly Asp Leu Leu Glu Phe	1423
90 95 100	
atc aag tgc cag gga gcc ctg cat gag gac gtg gca cgc aag atg ttc Ile Lys Cys Gln Gly Ala Leu His Glu Asp Val Ala Arg Lys Met Phe	1471
105 110 115	
cga cag ctc tcc tcc gcc gtc aag tac tgc cac gac ctg gac atc gtc Arg Gln Leu Ser Ser Ala Val Lys Tyr Cys His Asp Leu Asp Ile Val	1519
120 125 130	
cac cgg gac ctc aag tgc gag aac ctt ctc gtc gac aag gac ttc aac His Arg Asp Leu Lys Cys Glu Asn Leu Leu Asp Lys Asp Phe Asn	1567
135 140 145	
atc aag ctg tct gac ttt ggc ttc tcc aag cgc tgc ctg cgg gac agc Ile Lys Leu Ser Asp Phe Gly Phe Ser Lys Arg Cys Leu Arg Asp Ser	1615
150 155 160 165	

aat	ggg	cgc	atc	atc	ctc	agc	aag	acc	ttc	tgc	ggg	tcg	gca	gca	tat	1663	
Asn	Gly	Arg	Ile	Ile	Leu	Ser	Lys	Thr	Phe	Cys	Gly	Ser	Ala	Ala	Tyr		
			170					175					180				
gca	gcc	ccc	gag	gtg	ctg	cag	agc	atc	ccc	tac	cag	ccc	aag	gtg	tat	1711	
Ala	Ala	Pro	Glu	Val	Leu	Gln	Ser	Ile	Pro	Tyr	Gln	Pro	Lys	Val	Tyr		
			185					190					195				
gac	atc	tgg	agc	ctg	ggc	gtg	atc	ctg	tac	atc	atg	gtc	tgc	ggc	tcc	1759	
Asp	Ile	Trp	Ser	Leu	Gly	Val	Ile	Ile	Leu	Tyr	Ile	Met	Val	Cys	Gly		
			200					205				210					
atg	ccc	tat	gac	gac	tcc	gac	atc	agg	aag	atg	ctg	cgt	atc	cag	aag	1807	
Met	Pro	Tyr	Asp	Asp	Ser	Asp	Ile	Arg	Lys	Met	Leu	Arg	Ile	Gln	Lys		
			215					220			225						
gag	cac	cgt	gtg	gac	ttc	ccg	cgc	tcc	aag	aac	ctg	acc	tgc	gag	tgc	1855	
Glu	His	Arg	Val	Asp	Phe	Pro	Arg	Ser	Lys	Asn	Leu	Thr	Cys	Glu	Cys		
			230					235			240		245				
aag	gac	ctc	atc	tac	cgc	atg	ctg	cag	ccc	gac	gtc	agc	cag	cg	ctc	1903	
Lys	Asp	Leu	Ile	Tyr	Arg	Met	Leu	Gln	Pro	Asp	Val	Ser	Gln	Arg	Leu		
			250					255			260						
cac	atc	gat	gag	atc	ctc	agc	cac	tcg	tgg	ctg	cag	ccc	ccc	aag	ccc	1951	
His	Ile	Asp	Glu	Ile	Leu	Ser	His	Ser	Trp	Leu	Gln	Pro	Pro	Lys	Pro		
			265					270			275						
aaa	gcc	acg	tct	tct	gcc	tcc	ttc	aag	agg	gag	ggg	gag	ggc	aag	tac	1999	
Lys	Ala	Thr	Ser	Ser	Ala	Ser	Phe	Lys	Arg	Glu	Gly	Glu	Gly	Lys	Tyr		
			280					285			290						
cgc	gct	gag	tgc	aaa	ctg	gac	acc	aag	aca	ggc	ttg	agg	ccc	gac	cac	2047	
Arg	Ala	Glu	Cys	Lys	Leu	Asp	Thr	Lys	Thr	Gly	Leu	Arg	Pro	Asp	His		
			295					300			305						
cgg	ccc	gac	cac	aag	ctt	gga	gcc	aaa	acc	cag	cac	cg	ctg	ctg	gtg	2095	
Arg	Pro	Asp	His	Lys	Leu	Gly	Ala	Lys	Thr	Gln	His	Arg	Leu	Leu	Val		
			310					315			320		325				
gtg	ccc	gag	aac	gag	aac	agg	atg	gag	gac	agg	ctg	gcc	gag	acc	tcc	2143	
Val	Pro	Glu	Asn	Glu	Asn	Arg	Met	Glu	Asp	Arg	Leu	Ala	Glu	Thr	Ser		
			330					335			340						
agg	gcc	aaa	gac	cat	cac	atc	tcc	gga	gct	gag	gtg	ggg	aaa	gca	agc	2191	
Arg	Ala	Lys	Asp	His	His	Ile	Ser	Gly	Ala	Glu	Val	Gly	Lys	Ala	Ser		
			345					350			355						
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Thr	*																
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tcctgttggg ggaagtgacc aggtgaggcc agggccagca gcataagatg ggcagtgcct	3207
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aggtgatagc tgagatcacc tgatatgcag cccccacaca gtcctataac cagegcaccc	3327
cacagccggc aagcccagag tggaggctgc agacctggc ccagaaccgc aggggaacct	3387
aagggtacaa cttccaaggg ctccgttct cc	3419

<210> 519  
 <211> 784  
 <212> DNA  
 <213> Homo sapiens

<220>  
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 <222> (431)..(637)

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gggctccctag gaaggcacag ggctgtctgc tctgcagagg gctccagtgg aaaggaggga	180
atgaggaggg aaggagagggc cctgggtgga ccagacggcc acaccatgaa ccctcccaga	240
gacttttagac agagagagggc gctccacaac accccacact ccctctgcca tctctcaccc	300
cctccctctgt ccacacaggt cagcccaaga ctacccctgc ggtcattctg ttcctgcgt	360
cctgtgagga gccccaaagcc aacaaggcca cactggtgtg tctcatgaat aactttatcc	420
ggaaatcttg atg gtg acc tgg aag gca gat ggt acc ctc atc acc cag	469
Met Val Thr Trp Lys Ala Asp Gly Thr Leu Ile Thr Gln	
1 5 10	
agc gtg gag aag acc acg ccc tcc aaa cag agc aac aac aag tac gtg	517
Ser Val Glu Lys Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr Val	
15 20 25	
gcc agc agc tac ctg agc ctg acg ccc gag cag tgg agg tcc cgc aga	565

Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Arg Ser Arg Arg			
30	35	40	45

agc tac agc tgc cag gtt atg caa gaa ggg agc acc gtg gag aag tca	613		
Ser Tyr Ser Cys Gln Val Met Gln Glu Gly Ser Thr Val Glu Lys Ser			
50	55	60	

gtg gcc cct gca gaa tgt tca tag gtccagcccc ccacccacac ccacaggggc	667		
Val Ala Pro Ala Glu Cys Ser *			
65			

ctggagctgc aggatccag gggaggcgtc tctctctgca tcccaagcca ttccagccctt	727
ctcgctgtac ccagtaaaacc ctcaataaat atctttgtca gccagaaaaa aaaaaaaa	784

<210> 520  
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 <212> DNA  
 <213> Homo sapiens

<220>  
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 <222> (944) .. (2275)

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ttgcggctcc gggagggact gaaaaaccag agtccaaCCG aagctgagaa accagcttct	180
tgcgttgc ctgcgtcgcc gcccggcag ttgcgtacga gaaacgtggt ctggccctc	240
ggccggagagc ttttcgttg ggacggagaa gacagctcct tcttagtcgt tcgccttcgg	300
ggcccccagcg gcggcggcga agagcccgcc ctgtcccagt accagagatt gctttgcata	360
aatccacccc tgTTTgaaat ctatcaagtc ttgttaAGCC caacacaaca tcATGTAGCA	420
cttatAGGAa taAAAGGACT tatGGTATTa gaATTACCTA aaAGATGGGG gaAGAATTCT	480
gaATTGAAg gtggAAAATC AACAGTGAAT TGTAGTACCA ctccagttgc ggAGAGATT	540
ttcaccAGTT ccacctctct gactctaaAG catgctgcat ggtatccaaAg tggAAATCCTG	600
gatccccacg tagtgcgttt aacatcagac aacgtaatca gaATTACTC actacgtgag	660
cccgacacac ccactaacgt gataatactt tcagaagccg aagaggaaAg tctAGTACTC	720
aataaAGGAA gggcgtatac cgcatctcta ggagagacag cagttgcatt tgactttggg	780
ccattggcag cagtccaaa gactctattt ggacaaaacg gcaaAGATGA agtagtggca	840
tacccactgt acatcttata tgAAAATGGA gagactttcc tgacatacat cagtctgtta	900
cacagccctg gaaatatttG gaaAGCTGTT gggTCCATTG CCC atg cat CCT GCG	955
Met His Pro Ala	
1	

gct gaa gat aac tat ggt tat gat gcg tgt gct gta ctc tgc tta ccc	1003
Ala Glu Asp Asn Tyr Gly Tyr Asp Ala Cys Ala Val Leu Cys Leu Pro	

5	10	15	20	
tgt gtc ccc aat atc tta gtg atc gct act gaa tca gga atg ctg tat Cys Val Pro Asn Ile Leu Val Ile Ala Thr Glu Ser Gly Met Leu Tyr 25		30	35	1051
cac tgt gtc gtg cta gaa ggg gaa gaa gat gac cac acg tca gaa His Cys Val Val Leu Glu Gly Glu Glu Asp Asp His Thr Ser Glu 40	45		50	1099
aag tcc tgg gat tcc agg att gac ctc att cct tct ctg tat gtg ttt Lys Ser Trp Asp Ser Arg Ile Asp Leu Ile Pro Ser Leu Tyr Val Phe 55	60		65	1147
gaa tgt gtt gag ttg gag ctt gct ttg aaa ctg gca tct gga gag gat Glu Cys Val Glu Leu Glu Leu Ala Leu Lys Leu Ala Ser Gly Glu Asp 70	75		80	1195
gac cct ttt gat tct gac ttt tct tgt cca gtc aaa ctt cat aga gat Asp Pro Phe Asp Ser Asp Phe Ser Cys Pro Val Lys Leu His Arg Asp 85	90	95		1243
ccc aag tgt cct tca aga tat cac tgt act cat gaa gct ggt gta cat Pro Lys Cys Pro Ser Arg Tyr His Cys Thr His Glu Ala Gly Val His 105		110	115	1291
agt gtt ggg cta act tgg att cat aaa ctt cac aaa ttt ctt gga tca Ser Val Gly Leu Thr Trp Ile His Lys Leu His Lys Phe Leu Gly Ser 120	125		130	1339
gat gaa gaa gat aag gat agt tta cag gaa ctc tct aca gaa cag aaa Asp Glu Glu Asp Lys Asp Ser Leu Gln Glu Leu Ser Thr Glu Gln Lys 135	140		145	1387
tgc ttt gtt gaa cac atc ctt tgt acg agg cca ttg ccc tgc agg cag Cys Phe Val Glu His Ile Leu Cys Thr Arg Pro Leu Pro Cys Arg Gln 150	155		160	1435
cca gct cca att cga gga ttt tgg att gta cct gac att ctg gga ccc Pro Ala Pro Ile Arg Gly Phe Trp Ile Val Pro Asp Ile Leu Gly Pro 165	170	175		1483
acg atg atc tgc atc acc agt acc tat gaa tgc ctc ata tgg ccg tta Thr Met Ile Cys Ile Thr Ser Thr Tyr Glu Cys Leu Ile Trp Pro Leu 185	190		195	1531
tta agt aca gtc cat cca gcg tct cct ccc ctg ctt tgt act cga gaa Leu Ser Thr Val His Pro Ala Ser Pro Pro Leu Leu Cys Thr Arg Glu 200	205		210	1579
gat gtt gaa gtg gca gag tct ccc ctc cgt gtt ctg gct gaa acc cca Asp Val Glu Val Ala Glu Ser Pro Leu Arg Val Leu Ala Glu Thr Pro 215	220		225	1627
gat tcc ttt gaa aag cat att aga agc att ttg caa cgt agt gtt gcc Asp Ser Phe Glu Lys His Ile Arg Ser Ile Leu Gln Arg Ser Val Ala 230	235		240	1675
aat cca gca ttt ttg aaa gct tct gaa aag gac ata gcc cct cct Asn Pro Ala Phe Leu Lys Ala Ser Glu Lys Asp Ile Ala Pro Pro Pro 245	250	255		1723
gaa gaa tgc ctt cag ctc ctc agc aga gcc acc cag gtg ttc aga gag Glu Glu Cys Leu Gln Leu Leu Ser Arg Ala Thr Gln Val Phe Arg Glu 260				1771

265	270	275	
cag tac att ctc aaa cag gac ttg gca aag gag gag att cag	cgg agg		1819
Gln Tyr Ile Leu Lys Gln Asp Leu Ala Lys Glu Glu Ile Gln Arg Arg			
280	285	290	
gtc aaa tta tta tgt gac caa aaa aag aaa caa cta gaa gat ctc agt			1867
Val Lys Leu Leu Cys Asp Gln Lys Lys Gln Leu Glu Asp Leu Ser			
295	300	305	
tat tgt cga gaa gag agg aaa agt ctg cggt gaa atg gct gag cgt tta			1915
Tyr Cys Arg Glu Glu Arg Lys Ser Leu Arg Glu Met Ala Glu Arg Leu			
310	315	320	
gct gac aaa tat gag gaa gct aaa gaa aaa caa gag gat atc atg aac			1963
Ala Asp Lys Tyr Glu Glu Ala Lys Glu Lys Gln Glu Asp Ile Met Asn			
325	330	335	340
agg atg aaa aaa cta ctt cac agt ttt cac tct gag ctc cca gtt ctc			2011
Arg Met Lys Lys Leu Leu His Ser Phe His Ser Glu Leu Pro Val Leu			
345	350	355	
tct gat agt gag cga gac atg aag aaa gaa tta cag ctg ata cct gat			2059
Ser Asp Ser Glu Arg Asp Met Lys Lys Glu Leu Gln Leu Ile Pro Asp			
360	365	370	
caa ctt cga cat ttg ggc aat gcc atc aaa cag gtt act atg aaa aag			2107
Gln Leu Arg His Leu Gly Asn Ala Ile Lys Gln Val Thr Met Lys Lys			
375	380	385	
gat tat caa cag caa aag atg gag aag gtg ttg agt ctt cca aaa ccc			2155
Asp Tyr Gln Gln Lys Met Glu Lys Val Leu Ser Leu Pro Lys Pro			
390	395	400	
acc att att ctc agt gcc tac cag cga aag tgc att cag tcc atc ctg			2203
Thr Ile Ile Leu Ser Ala Tyr Gln Arg Lys Cys Ile Gln Ser Ile Leu			
405	410	415	420
aaa gag gag ggt gaa cat ata agg gaa atg gtg aag caa atc aat gat			2251
Lys Glu Glu Gly Glu His Ile Arg Glu Met Val Lys Gln Ile Asn Asp			
425	430	435	
atc cgc aat cat gta aac ttc tga caccaccagg agctgactca cacctgaact			2305
Ile Arg Asn His Val Asn Phe *			
440			
gaacaccatt gaaggcttaa acccatattg taaaacaggt agaattatct aatttataaa			2365
aaggtgtttt gatgacaaaa aaaaaaaaa			2393

<210> 521  
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<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (49)..(960)

<400> 521  
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57

Met Ala Ala  
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Arg Leu Leu Cys Ile Asn Pro Pro Leu Phe Glu Ile Tyr Gln Val Leu	
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Thr Phe Leu Thr Tyr Ile Ser Leu Leu His Ser Pro Gly Asn Ile Trp				
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atg gca tgt cac cga tgt ctg gtg tat ctg ggg gat ttg tcc cga tat Met Ala Cys His Arg Cys Leu Val Tyr Leu Gly Asp Leu Ser Arg Tyr	691
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cag aat gaa tta gct ggc gta gat acc gag ctg cta gcc gag aga ttt Gln Asn Glu Leu Ala Gly Val Asp Thr Glu Leu Leu Ala Glu Arg Phe	739
120 125 130	
tac tac caa gcc ctg tca gta gct cct cag att gga atg ccc ttc aat Tyr Tyr Gln Ala Leu Ser Val Ala Pro Gln Ile Gly Met Pro Phe Asn	787
135 140 145 150	
cag ctg ggc acc ctg gca ggc agc aag tac tat aat gtg gaa gcc atg Gln Leu Gly Thr Leu Ala Gly Ser Lys Tyr Tyr Asn Val Glu Ala Met	835
155 160 165	
tat tgc tac ctg cgc tgc atc cag tca gaa gtg tcc ttt gag gga gcc Tyr Cys Tyr Leu Arg Cys Ile Gln Ser Glu Val Ser Phe Glu Gly Ala	883
170 175 180	
tat ggg aac ctc aag cgg ctg tat gac aag gca gcc aaa atg tac cac Tyr Gly Asn Leu Lys Arg Leu Tyr Asp Lys Ala Ala Lys Met Tyr His	931
185 190 195	
caa ctg aag aag tgt gag act cgg aaa ctg tct cct ggc aaa aag cga Gln Leu Lys Lys Cys Glu Thr Arg Lys Leu Ser Pro Gly Lys Lys Arg	979
200 205 210	
tgt aaa gac att aaa agg ttg cta gtg aac ttt atg tat ctg caa agc Cys Lys Asp Ile Lys Arg Leu Leu Val Asn Phe Met Tyr Leu Gln Ser	1027
215 220 225 230	
ctc cta cag ccc aaa agc agc tcc gtg gac tca gag ctg acc tca ctt Leu Leu Gln Pro Lys Ser Ser Val Asp Ser Glu Leu Thr Ser Leu	1075

235	240	245	
tgc cag tca gtc ctg gag gac ttc aac ctc tgc ctc ttc tac ctg ccc Cys Gln Ser Val Leu Glu Asp Phe Asn Leu Cys Leu Phe Tyr Leu Pro 250	255	260	1123
tcc tca ccc aac ctc agc ctg gcc agt gag gat gag gag gag tat gag Ser Ser Pro Asn Leu Ser Leu Ala Ser Glu Asp Glu Glu Tyr Glu 265	270	275	1171
agt gga tat gct ttc ctc ccg gac ctt ctc atc ttt caa atg gtc atc Ser Gly Tyr Ala Phe Leu Pro Asp Leu Leu Ile Phe Gln Met Val Ile 280	285	290	1219
atc tgc ctt atg tgt gtg cac agc ttg gag aga gca gga tcc aag cag Ile Cys Leu Met Cys Val His Ser Leu Glu Arg Ala Gly Ser Lys Gln 295	300	305	1267
tac agt gca gcc att gcc ttc acc ctg gcc ctc ttt tcc cac ctc gtc Tyr Ser Ala Ala Ile Ala Phe Thr Leu Ala Leu Phe Ser His Leu Val 315	320	325	1315
aat cat gtc aac ata cgg ctg cag gct gag ctg gaa gag ggc gag aat Asn His Val Asn Ile Arg Leu Gln Ala Glu Leu Glu Glu Gly Asn 330	335	340	1363
ccc gtc ccg gca ttc cag agt gat ggc aca gat gaa cca gag tcc aag Pro Val Pro Ala Phe Gln Ser Asp Gly Thr Asp Glu Pro Glu Ser Lys 345	350	355	1411
gaa cct gtg gag aaa gag gag gag cca gat cct gag cct cct cct gta Glu Pro Val Glu Lys Glu Glu Pro Asp Pro Glu Pro Pro Pro Val 360	365	370	1459
aca ccc caa gtg ggt gag ggc aga aag agc cgt aag ttc tct cgc ctc Thr Pro Gln Val Gly Glu Arg Lys Ser Arg Lys Phe Ser Arg Leu 375	380	385	1507
tcc tgt ctc cgc cgt cgc cac cca ccc aaa gtt ggt gat gac agt Ser Cys Leu Arg Arg Arg His Pro Pro Lys Val Gly Asp Asp Ser 395	400	405	1555
gac ctg agt gaa ggc ttt gaa tcg gac tca agc cat gac tca gcc cgg Asp Leu Ser Glu Gly Phe Glu Ser Asp Ser Ser His Asp Ser Ala Arg 410	415	420	1603
gcc agt gag ggc tca gac agt ggc tct gac aag agt ctt gaa ggt ggg Ala Ser Glu Gly Ser Asp Ser Gly Ser Asp Lys Ser Leu Glu Gly Gly 425	430	435	1651
gga acg gcc ttt gat gct gaa aca gac tcg gaa atg aat agc cag gag Gly Thr Ala Phe Asp Ala Glu Thr Asp Ser Glu Met Asn Ser Gln Glu 440	445	450	1699
tcc cga tca gac ttg gaa gat atg gag gaa gag gag ggg aca cgg tca Ser Arg Ser Asp Leu Glu Asp Met Glu Glu Glu Gly Thr Arg Ser 455	460	465	1747
cca acc ctg gag ccc cct cg <sup>g</sup> ggc aga tca gag gct ccc gat tcc ctc Pro Thr Leu Glu Pro Pro Arg Gly Arg Ser Glu Ala Pro Asp Ser Leu 475	480	485	1795
aat ggc cca ctg ggc ccc agt gag gct agc att gcc agc aat cta caa Asn Gly Pro Leu Gly Pro Ser Glu Ala Ser Ile Ala Ser Asn Leu Gln 490			1843

490	495	500	
gcc atg tcc acc cag atg ttc cag act aag cgc tgc ttc cga ctg gcc Ala Met Ser Thr Gln Met Phe Gln Thr Lys Arg Cys Phe Arg Leu Ala 505	510	515	1891
ccc acc ttt agc aac ctg ctc ctc cag ccc acc acc aac cct cat acc Pro Thr Phe Ser Asn Leu Leu Gln Pro Thr Thr Asn Pro His Thr 520	525	530	1939
tcg gcc agc cac agg cct tgc gtc aat ggg gat gta gac aag cct tca Ser Ala Ser His Arg Pro Cys Val Asn Gly Asp Val Asp Lys Pro Ser 535	540	545	1987
gag cca gcc tct gag gag ggc tct gag tcg gag ggg agt gag tcc agt Glu Pro Ala Ser Glu Glu Gly Ser Glu Ser Gly Ser Glu Ser Ser 555	560	565	2035
gga cgc tcc tgt cgg aat gag cgc agc atc cag gag aag ctt cag gtc Gly Arg Ser Cys Arg Asn Glu Arg Ser Ile Gln Glu Lys Leu Gln Val 570	575	580	2083
ctg atg gcc gaa ggt ctg ctt cct gct gtg aaa gtc ttc ctg gac tgg Leu Met Ala Glu Gly Leu Leu Pro Ala Val Lys Val Phe Leu Asp Trp 585	590	595	2131
ctt cgg acc aac ccc gac ctc atc atc gtg tgt gca cag agc tct caa Leu Arg Thr Asn Pro Asp Leu Ile Ile Val Cys Ala Gln Ser Ser Gln 600	605	610	2179
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ggt gaa ctc cag gag tct ggc ctg gcc ttg tgt cct gag gtc caa gat Gly Glu Leu Gln Glu Ser Gly Leu Ala Leu Cys Pro Glu Val Gln Asp 635	640	645	2275
ctt ctt gaa ggt tgt gaa ctg cct gac ctc ccc tct agc ctt ctg ctc Leu Leu Glu Gly Cys Glu Leu Pro Asp Leu Pro Ser Ser Leu Leu Leu 650	655	660	2323
cca gag gac atg gct ctt cgt aac ctg ccc ccg ctc cga gct gcc cac Pro Glu Asp Met Ala Leu Arg Asn Leu Pro Pro Leu Arg Ala Ala His 665	670	675	2371
aga cgc ttt aac ttt gac acg gat cgg ccc ctg ctc agc acc tta gag Arg Arg Phe Asn Phe Asp Thr Asp Arg Pro Leu Leu Ser Thr Leu Glu 680	685	690	2419
gag tca gtg gtg cgc atc tgc atc cgc agc ttt ggt cat ttc atc Glu Ser Val Val Arg Ile Cys Cys Ile Arg Ser Phe Gly His Phe Ile 695	700	705	2467
gcc cgc ctg caa ggc agc atc ctg cag ttc aac cca gag gtt ggc atc Ala Arg Leu Gln Gly Ser Ile Leu Gln Phe Asn Pro Glu Val Gly Ile 715	720	725	2515
ttc gtc agc att gcc cag tct gag cag gag agc ctg ctg cag cag gcc Phe Val Ser Ile Ala Gln Ser Glu Gln Glu Ser Leu Leu Gln Gln Ala 730	735	740	2563
cag gca cag ttc cga atg gca cag gag gaa gct cgt cgg aac agg ctc Gln Ala Gln Phe Arg Met Ala Gln Glu Glu Ala Arg Arg Asn Arg Leu			2611

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		770	
gag ggc agc ctg cag cag ccc aag gcc cag tca gcc atg tct ccc tac Glu Gly Ser Leu Gln Gln Pro Lys Ala Gln Ser Ala Met Ser Pro Tyr	775	780	2707
		785	
780		790	
ctc gtc cct gac acc cag gcc ctc tgc cac cat ctc cct gtc atc cgc Leu Val Pro Asp Thr Gln Ala Leu Cys His His Leu Pro Val Ile Arg	795	800	2755
		805	
800		805	
caa ctg gcc acc agt ggc cgc ttc att gtc atc atc cca agg aca gtg Gln Leu Ala Thr Ser Gly Arg Phe Ile Val Ile Ile Pro Arg Thr Val	810	815	2803
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815		820	
atc gat ggc ctg gat ttg ctg aag aag gaa cac cca ggg gcc cgg gat Ile Asp Gly Leu Asp Leu Leu Lys Lys Glu His Pro Gly Ala Arg Asp	825	830	2851
		835	
830		835	
ggg att cgg tac ctg gag gca gag ttt aaa aaa gga aac agg tac att Gly Ile Arg Tyr Leu Glu Ala Glu Phe Lys Lys Gly Asn Arg Tyr Ile	840	845	2899
		850	
845		850	
cgc tgc cag aaa gag gtg gga aag agc ttt gag cgg cat aag ctg aag Arg Cys Gln Lys Glu Val Gly Lys Ser Phe Glu Arg His Lys Leu Lys	855	860	2947
		865	
860		870	
agg cag gat gca gat gcc tgg act ctc tat aag atc cta gac agc tgc Arg Gln Asp Ala Asp Ala Trp Thr Leu Tyr Lys Ile Leu Asp Ser Cys	875	880	2995
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aaa cag ctg act ctg gcc cag ggg gca ggt gag gag gat ccg agt ggc Lys Gln Leu Thr Leu Ala Gln Gly Ala Gly Glu Glu Asp Pro Ser Gly	890	895	3043
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895		900	
atg gtg acc atc atc aca ggc ctt cca ctg gac aac ccc agc gtg ctt Met Val Thr Ile Ile Thr Gly Leu Pro Leu Asp Asn Pro Ser Val Leu	905	910	3091
		915	
910		915	
tca ggc ccc atg cag gca gcc ctg cag gcc gct gcc cac gcc agt gtg Ser Gly Pro Met Gln Ala Ala Leu Gln Ala Ala His Ala Ser Val	920	925	3139
		930	
925		930	
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945		950	
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gacaata	atg	gtt	ttt	ggt	acc	aaa	ttc	cca	gag	agt	aaa	ata	gtt	ctg	229	
Met	Val	Phe	Gly	Thr	Lys	Phe	Pro	Glu	Ser	Lys	Ile	Val	Leu			
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gcc	tta	aga	act	aaa	cgg	gaa	ggc	cct	ggg	gaa	gtt	agg	att	caa	gtt	277
Ala	Leu	Arg	Thr	Lys	Arg	Glu	Gly	Pro	Gly	Glu	Val	Arg	Ile	Gln	Val	
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tat	gcc	tta	agg	ata	ggt	gag	aat	gag	aac	aca	gac	aga	gaa	aga	gac	325
Tyr	Ala	Leu	Arg	Ile	Gly	Glu	Asn	Glu	Asn	Thr	Asp	Arg	Glu	Arg	Asp	
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35																
cca	act	ccc	acc	ccc	tgt	ccc	cag	gga	cac	cgg	atg	atg	acg	gag	cct	373

Pro	Thr	Pro	Thr	Pro	Cys	Pro	Gln	Gly	His	Arg	Met	Met	Thr	Glu	Pro		
						50				55			60				
agg	gag	agg	aga	ggt	tac	agt	gta	cca	cct	aga	cca	gag	gtc	cg	acc	421	
Arg	Glu	Arg	Arg	Gly	Tyr	Ser	Val	Pro	Pro	Arg	Pro	Glu	Val	Arg	Thr		
65							70					75					
cag	gcc	acg	gag	tgg	aga	gta	gaa	tct	aac	ttc	aac	aag	atc	ttc	469		
Gln	Ala	Thr	Glu	Trp	Arg	Val	Glu	Glu	Ser	Asn	Phe	Asn	Lys	Ile	Phe		
80							85					90					
ctg	aaa	aaa	gac	gct	gag	ctt	gga	cg	tcc	aac	cac	ctc	cct	acc	tgg	517	
Leu	Lys	Lys	Asp	Ala	Glu	Leu	Gly	Arg	Ser	Asn	His	Leu	Pro	Thr	Trp		
95							100				105			110			
gat	aag	ccg	gag	gat	gct	tct	tgg	ctt	ccc	caa	agc	tgt	ctt	gg	565		
Asp	Lys	Pro	Glu	Asp	Ala	Ser	Trp	Leu	Pro	Gln	Ser	Cys	Leu	Gly	Gly		
115							120					125					
gat	gct	gtg	gca	acc	aca	ggg	gag	att	cac	gag	gag	aaa	gcc	tgg	aag	613	
Asp	Ala	Val	Ala	Thr	Thr	Gly	Glu	Ile	His	Glu	Glu	Lys	Ala	Trp	Lys		
130							135					140					
acc	aga	gcc	ctg	gaa	gtg	ggg	cag	cca	gcc	cag	cg	gac	att	cgt	agg	661	
Thr	Arg	Ala	Leu	Glu	Val	Gly	Gln	Pro	Ala	Gln	Arg	Asp	Ile	Arg	Arg		
145							150					155					
ggc	gag	ctc	tgg	ggg	aag	gag	cac	ggg	gct	gat	caa	gcc	atc	cag	gaa	709	
Gly	Glu	Leu	Trp	Gly	Lys	Glu	His	Gly	Ala	Asp	Gln	Ala	Ile	Gln	Glu		
160							165					170					
aca	ctg	gag	gac	ttg	tcc	agc	ctt	gaa	aga	act	cta	gtg	gtt	tct	gaa	757	
Thr	Leu	Glu	Asp	Leu	Ser	Ser	Leu	Glu	Arg	Thr	Leu	Val	Val	Ser	Glu		
175							180				185			190			
tct	agc	cca	ctt	ggc	ggg	gat	tgt	cag	gag	gtg	acc	act	ctc	acg	gtg	805	
Ser	Ser	Pro	Leu	Gly	Gly	Asp	Cys	Gln	Glu	Val	Thr	Thr	Leu	Thr	Val		
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aaa	tac	caa	gtg	tca	gag	gaa	gtg	cca	tct	gg	aca	gtg	atc	ggg	aag	853	
Lys	Tyr	Gln	Val	Ser	Glu	Val	Pro	Ser	Gly	Thr	Val	Ile	Gly	Lys			
210							215					220					
ctg	tcc	cag	gaa	ctg	ggc	cg	gag	agg	cg	agg	caa	gct	ggg	gct	901		
Leu	Ser	Gln	Glu	Leu	Gly	Arg	Glu	Glu	Arg	Arg	Gln	Ala	Gly	Ala			
225							230					235					
gcc	ttc	cag	gtg	ttg	cag	ctg	cct	cag	g	cc	att	cag	gtg	gac	949		
Ala	Phe	Gln	Val	Leu	Gln	Leu	Pro	Gln	Ala	Leu	Pro	Ile	Gln	Val	Asp		
240							245					250					
tct	gag	gaa	ggc	ttg	ctc	agc	aca	ggc	agg	cg	gt	cat	cg	gag	cag	997	
Ser	Glu	Glu	Gly	Leu	Leu	Ser	Thr	Gly	Arg	Arg	Leu	Asp	Arg	Glu	Gln		
255							260				265			270			
ctg	tgc	cga	cag	tgg	gat	ccc	tgc	ctg	gtt	tcc	ttt	gat	gtg	ctt	gcc	1045	
Leu	Cys	Arg	Gln	Trp	Asp	Pro	Cys	Leu	Val	Ser	Phe	Asp	Val	Leu	Ala		
275							280					285					
aca	ggg	gat	ttg	gct	ctg	atc	cat	gtg	gag	atc	caa	gtg	ctg	gac	atc	1093	
Thr	Gly	Asp	Leu	Ala	Leu	Ile	His	Val	Glu	Ile	Gln	Val	Leu	Asp	Ile		
290							295					300					
aat	gac	cac	cag	cca	cg	ttt	ccc	aaa	ggc	gag	cag	gag	ctg	gaa	atc	1141	



His Asn Gly Leu Val His Cys Trp Leu Ser Gln Glu Leu Gly His Phe 560                        565                        570			
agg ctg aaa aga act aat ggc aac aca tac atg ttg cta acc aat gcc Arg Leu Lys Arg Thr Asn Gly Asn Thr Tyr Met Leu Leu Thr Asn Ala 575                        580                        585                        590			1957
aca ctg gac aga gag cag tgg ccc aaa tat acc ctc act ctg tta gcc Thr Leu Asp Arg Glu Gln Trp Pro Lys Tyr Thr Leu Thr Leu Ala 595                        600                        605			2005
caa gac caa gga ctc cag ccc tta tca gcc aag aaa cag ctc agc att Gln Asp Gln Gly Leu Gln Pro Leu Ser Ala Lys Lys Gln Leu Ser Ile 610                        615                        620			2053
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tat gaa gtc tcc acg cgg gaa aac aac tta ccc tct ctt cac ctc att Tyr Glu Val Ser Thr Arg Glu Asn Asn Leu Pro Ser Leu His Leu Ile 640                        645                        650			2149
acc atc aag gct cat gat gca gac ttg ggc att aat gga aaa gtc tca Thr Ile Lys Ala His Asp Ala Asp Leu Gly Ile Asn Gly Lys Val Ser 655                        660                        665                        670			2197
tac cgc atc cag gac tcc cca gtt gct cac tta gta gct att gac tcc Tyr Arg Ile Gln Asp Ser Pro Val Ala His Leu Val Ala Ile Asp Ser 675                        680                        685			2245
aac aca gga gag gtc act gct cag agg tca ctg aac tat gaa gag atg Asn Thr Gly Glu Val Thr Ala Gln Arg Ser Leu Asn Tyr Glu Glu Met 690                        695                        700			2293
gcc ggc ttt gag ttc cag gtg atc gca gag gac agc ggg caa ccc atg Ala Gly Phe Glu Phe Gln Val Ile Ala Glu Asp Ser Gly Gln Pro Met 705                        710                        715			2341
ctt gca tcc agt gtc tct gtg tgg gtc agc ctc ttg gat gcc aat gat Leu Ala Ser Ser Val Val Trp Val Ser Leu Leu Asp Ala Asn Asp 720                        725                        730			2389
aat gcc cca gag gtg gtc cag cct gtg ctc agc gat gga aaa gcc agc Asn Ala Pro Glu Val Val Gln Pro Val Leu Ser Asp Gly Lys Ala Ser 735                        740                        745                        750			2437
ctc tcc gtg ctt gtg aat gcc tcc aca ggc cac ctg ctg gtg ccc atc Leu Ser Val Leu Val Asn Ala Ser Thr Gly His Leu Leu Val Pro Ile 755                        760                        765			2485
gag act ccc aat ggc ttg ggc cca gcg ggc act gac aca cct cca ctg Glu Thr Pro Asn Gly Leu Gly Pro Ala Gly Thr Asp Thr Pro Pro Leu 770                        775                        780			2533
gcc act cac agc tcc egg cca ttc ctt ttg aca acc att gtg gca aga Ala Thr His Ser Ser Arg Pro Phe Leu Leu Thr Thr Ile Val Ala Arg 785                        790                        795			2581
gat gca gac tcg ggg gca aat gga gag ccc ctc tac agc atc cgc agt Asp Ala Asp Ser Gly Ala Asn Gly Glu Pro Leu Tyr Ser Ile Arg Ser 800                        805                        810			2629
gga aat gaa gcc cac ctc ttc atc ctc aac cct cat acg ggg cag ctg			2677

Gly Asn Glu Ala His Leu Phe Ile Leu Asn Pro His Thr Gly Gln Leu				
815	820	825	830	
ttc gtc aat gtc acc aat gcc agc agc ctc att ggg agt gag tgg gag				2725
Phe Val Asn Val Thr Asn Ala Ser Ser Leu Ile Gly Ser Glu Trp Glu				
835	840	845		
ctg gag ata gta gta gag gac cag gga agc ccc ccc tta cag acc cga				2773
Leu Glu Ile Val Val Glu Asp Gln Gly Ser Pro Pro Leu Gln Thr Arg				
850	855	860		
gcc ctg ttg agg gtc atg ttt gtc acc agt gtg gac cac ctg agg gac				2821
Ala Leu Leu Arg Val Met Phe Val Thr Ser Val Asp His Leu Arg Asp				
865	870	875		
tca gcc cgc aag cct ggg gcc ttg agc atg tcg atg ctg acg gtg atc				2869
Ser Ala Arg Lys Pro Gly Ala Leu Ser Met Ser Met Leu Thr Val Ile				
880	885	890		
tgc ctg gct gta ctg ttg ggc atc ttc ggg ttg atc ctg gct ttg ttc				2917
Cys Leu Ala Val Leu Leu Gly Ile Phe Gly Leu Ile Leu Ala Leu Phe				
895	900	905	910	
atg tcc atc tgc cgg aca gaa aag aag gac aac agg gcc tac aac tgt				2965
Met Ser Ile Cys Arg Thr Glu Lys Lys Asp Asn Arg Ala Tyr Asn Cys				
915	920	925		
cgg gag gcc gag tcc acc tac cgc cag cag ccc aag agg ccc cag aaa				3013
Arg Glu Ala Glu Ser Thr Tyr Arg Gln Gln Pro Lys Arg Pro Gln Lys				
930	935	940		
cac att cag aag gca gac atc cac ctc gtg cct gtg ctc agg ggt cag				3061
His Ile Gln Lys Ala Asp Ile His Leu Val Pro Val Leu Arg Gly Gln				
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gca ggt gag cct tgt gaa gtc ggg cag tcc cac aaa gat gtg gac aag				3109
Ala Gly Glu Pro Cys Glu Val Gly Gln Ser His Lys Asp Val Asp Lys				
960	965	970		
gag gcg atg atg gaa gca ggc tgg gac ccc tgc ctg cag gcc ccc ttc				3157
Glu Ala Met Met Glu Ala Gly Trp Asp Pro Cys Leu Gln Ala Pro Phe				
975	980	985	990	
cac ctc acc ccg acc ctg tac agg acg ctg cgt aat caa ggc aac cag				3205
His Leu Thr Pro Thr Leu Tyr Arg Thr Leu Arg Asn Gln Gly Asn Gln				
995	1000	1005		
gga gca ccg gcg gag agc cga gag gtg ctg caa gac acg gtc aac ctc				3253
Gly Ala Pro Ala Glu Ser Arg Glu Val Leu Gln Asp Thr Val Asn Leu				
1010	1015	1020		
ctt ttc aac cat ccc agg cag agg aat gcc tcc cgg gag aac ctg aac				3301
Leu Phe Asn His Pro Arg Gln Arg Asn Ala Ser Arg Glu Asn Leu Asn				
1025	1030	1035		
ctt ccc gag ccc cag cct gcc aca ggc cag cca cgt tcc agg cct ctg				3349
Leu Pro Glu Pro Gln Pro Ala Thr Gly Gln Pro Arg Ser Arg Pro Leu				
1040	1045	1050		
aag gtt gca ggc agc ccc aca ggg agg ctg got gga gac cag ggc agt				3397
Lys Val Ala Gly Ser Pro Thr Gly Arg Leu Ala Gly Asp Gln Gly Ser				
1055	1060	1065	1070	
gag gaa gcc cca cag agg cca cca gcc tcc tct gca acc ctg aga cgg				3445

Glu Glu Ala Pro Gln Arg Pro Pro Ala Ser Ser Ala Thr Leu Arg Arg		
1075	1080	1085
cag cga cat ctc aat ggc aaa gtg tcc cct gag aaa gaa tca ggg ccc		3493
Gln Arg His Leu Asn Gly Lys Val Ser Pro Glu Lys Glu Ser Gly Pro		
1090	1095	1100
cgt cag atc ctg cgg agc ctg gtc cgg ctg tct gtg gct gcc ttc gcc		3541
Arg Gln Ile Leu Arg Ser Leu Val Arg Leu Ser Val Ala Ala Phe Ala		
1105	1110	1115
gag cg <sup>g</sup> aac ccc gtg gag g <sup>a</sup> ctc act gtg gat tct cct ctt cag		3589
Glu Arg Asn Pro Val Glu Glu Leu Thr Val Asp Ser Pro Pro Val Gln		
1120	1125	1130
caa atc tcc cag ctg tcc ttg ctg cat cag ggc caa ttc cag ccc		3637
Gln Ile Ser Gln Leu Leu Ser Leu Leu His Gln Gly Gln Phe Gln Pro		
1135	1140	1145
aaa cca aac cac cga gga aat aag tac ttg gcc aag cca gga ggc agc		3685
Lys Pro Asn His Arg Gly Asn Lys Tyr Leu Ala Lys Pro Gly Gly Ser		
1155	1160	1165
agg agt gca atc cca gac aca gat ggc cca agt gca agg gct gga ggc		3733
Arg Ser Ala Ile Pro Asp Thr Asp Gly Pro Ser Ala Arg Ala Gly Gly		
1170	1175	1180
cag aca gac cca gaa cag gag gaa ggg cct ttg gat cct gaa gag gac		3781
Gln Thr Asp Pro Glu Gln Glu Gly Pro Leu Asp Pro Glu Glu Asp		
1185	1190	1195
ctc tct gtg aag caa ctg cta gaa gaa gag ctg tca agt ctg ctg gac		3829
Leu Ser Val Lys Gln Leu Leu Glu Glu Glu Leu Ser Ser Leu Leu Asp		
1200	1205	1210
ccc agc aca ggt ctg gcc ctg gac cgg ctg agc gcc cct gac ccg gcc		3877
Pro Ser Thr Gly Leu Ala Leu Asp Arg Leu Ser Ala Pro Asp Pro Ala		
1215	1220	1225
1230		
tgg atg gcg aga ctc tct ttg ccc ctc acc acc aac tac cgt gac aat		3925
Trp Met Ala Arg Leu Ser Leu Pro Leu Thr Thr Asn Tyr Arg Asp Asn		
1235	1240	1245
gtg atc tcc ccg gat gct gca gcc acg gag gag cca agg acc ttc cag		3973
Val Ile Ser Pro Asp Ala Ala Thr Glu Glu Pro Arg Thr Phe Gln		
1250	1255	1260
acg ttc ggc aag gca gag gca cca gag ctg agc cca aca ggc acg agg		4021
Thr Phe Gly Lys Ala Glu Ala Pro Glu Leu Ser Pro Thr Gly Thr Arg		
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ctg gcc agc acc ttt gtc tcg gag atg agc tca ctg ctg gag atg ctg		4069
Leu Ala Ser Thr Phe Val Ser Glu Met Ser Ser Leu Leu Glu Met Leu		
1280	1285	1290
ctg gaa cag cgc tcc agc atg ccc gtg gag gcc gcc tcc gag ggc ctg		4117
Leu Glu Gln Arg Ser Ser Met Pro Val Glu Ala Ala Ser Glu Ala Leu		
1295	1300	1305
1310		
cgg cgg ctc tcg gtc tgc ggg agg acc ctc agt tta gac ttg gcc acc		4165
Arg Arg Leu Ser Val Cys Gly Arg Thr Leu Ser Leu Asp Leu Ala Thr		
1315	1320	1325
agt gca gcc tca ggc atg aaa gtg caa ggg gac cca ggt gga aag acg		4213

Ser Ala Ala Ser Gly Met Lys Val Gln Gly Asp Pro Gly Gly Lys Thr  
1330 1335 1340

ggg act gag ggc aag agc aga ggc agc agc agc agc agg tgc ctg 4261  
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**tga** 4264

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	Met Glu Phe Ser Gly Arg Lys Arg	
	1                    5	

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agg aag ctg agg ttg gca ggt gac cag agg aat gct tcc tac cct cat      159
Arg Lys Leu Arg Leu Ala Gly Asp Gln Arg Asn Ala Ser Tyr Pro His
          10           15           20

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tgc ctt cag ttt tac ttg cag cca cct tct gaa aac ata tct tta aca 207  
 Cys Leu Gln Phe Tyr Leu Gln Pro Pro Ser Glu Asn Ile Ser Leu Thr  
 25 30 35 40

gaa ttt gaa aac ttg gct att gat aga gtt aaa ttg tta aaa tca gtt      255  
 Glu Phe Glu Asn Leu Ala Ile Asp Arg Val Lys Leu Leu Lys Ser Val  
 45                50                55

gaaaatcttggagtgtatgtaaaaggactgaacaaatac cag agt 303  
 Glu Asn Leu Gly Val Ser Tyr Val Lys Gly Thr Glu Gln Tyr Gln Ser  
 60 65 70

aag ttg gag agt gag ctt cg<sup>75</sup> aag ctc aag ttt tcc tac aga gag aag Lys Leu Glu Ser Glu Leu Arg Lys Leu Lys Phe Ser Tyr Arg Glu Lys 351  
80 85

cta gaa gat gaa tat gaa cca cga aga aga gat cat att tct cat ttt 399  
Leu Glu Asp Glu Tyr Glu Pro Arg Arg Arg Asp His Ile Ser His Phe  
80 85 90 95 100

att ttg cgg ctt gct tat tgc cag tct gaa gaa ctt aga cgc tgg ttc 447  
Ile Leu Arg Leu Ala Tyr Cys Gln Ser Glu Glu Leu Arg Arg Trp Phe  
105 110 115 120

att caa caa gaa atg gat ctc ctt cga ttt aga ttt agt att tta ccc 495  
Ile Gln Gln Glu Met Asp Leu Leu Arg Phe Arg Phe Ser Ile Leu Pro

aag gat aaa att cag gat ttc tta aag gat agc caa ttg cag ttt gag 543  
Lys Asp Lys Ile Gln Asp Phe Leu Lys Asp Ser Gln Leu Gln Phe Glu

gct ata agt gat gaa gag aag act ctt cga gaa cag gag att gtt gcc Ala Ile Ser Asp Glu Glu Lys Thr Leu Arg Glu Gln Glu Ile Val Ala	155 160 165	591
tca tca cca agt tta agt gga ctt aag ttg ggg ttc gag tcc att tat Ser Ser Pro Ser Leu Ser Gly Leu Lys Leu Gly Phe Glu Ser Ile Tyr	170 175 180	639
aag atc cct ttt gct gat gct ctg gat ttg ttt cga gga agg aaa gtc Lys Ile Pro Phe Ala Asp Ala Leu Asp Leu Phe Arg Gly Arg Lys Val	185 190 195	687
tat ttg gaa gat ggc ttt gct tac gta cca ctt aag gac att gtg gca Tyr Leu Glu Asp Gly Phe Ala Tyr Val Pro Leu Lys Asp Ile Val Ala	205 210 215	735
atc atc ctg aat gaa ttt aga gcc aaa ctg tcc aag gct ttg gca tta Ile Ile Leu Asn Glu Phe Arg Ala Lys Leu Ser Lys Ala Leu Ala Leu	220 225 230	783
aca gcc agg tcc ttg cct gct gtg cag tct gat gaa aga ctt cag cct Thr Ala Arg Ser Leu Pro Ala Val Gln Ser Asp Glu Arg Leu Gln Pro	235 240 245	831
ctg ctc aat cac ctc agt cat tcc tac act ggc caa gat tac agt acc Leu Leu Asn His Leu Ser His Ser Tyr Thr Gly Gln Asp Tyr Ser Thr	250 255 260	879
cag gga aat gtt ggg aag att tct tta gat cag att gat ttg ctt tct Gln Gly Asn Val Gly Lys Ile Ser Leu Asp Gln Ile Asp Leu Leu Ser	265 270 275	927
acc aaa tcc ttc cca cct tgc atg cgt cag tta cat aaa gcc ttg cgg Thr Lys Ser Phe Pro Pro Cys Met Arg Gln Leu His Lys Ala Leu Arg	285 290 295	975
gaa aat cac cat ctt cgt cat gga ggc cga atg cag tat ggc cta ttt Glu Asn His His Leu Arg His Gly Gly Arg Met Gln Tyr Gly Leu Phe	300 305 310	1023
ctg aag ggc att ggt tta act ttg gaa cag gca ttg cag ttc tgg aag Leu Lys Gly Ile Gly Leu Thr Leu Glu Gln Ala Leu Gln Phe Trp Lys	315 320 325	1071
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atg gcg gct acg gag ccg atc ttg gcg gcc act ggg aat ccc gcg gcg	287
Met Ala Ala Thr Glu Pro Ile Leu Ala Ala Thr Gly Ser Pro Ala Ala	
1 5 10 15	
gtg cac cgg aga aac tgg aag gag ccg gtt cga gct cag ccc ctg agc	335
Val His Arg Arg Asn Trp Lys Glu Pro Val Arg Ala Gln Pro Leu Ser	
20 25 30	
gta act gtg tgg gct cct cgc tgc cag agg cct cac cgc ctg ccc ctg	383
Val Thr Val Trp Ala Pro Arg Cys Gln Arg Pro His Arg Leu Pro Leu	
35 40 45	
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Ser Leu Pro Val Pro Thr Pro Arg Ser Leu Lys Pro Ser Leu Arg Pro  
 50 55 60

gag ctg cgg cct ccg cgg ccc tgg agc tgc ctc tcg ggc ccg cac ccg	479
Glu Leu Arg Pro Pro Arg Pro Trp Ser Cys Leu Ser Gly Pro His Pro	
65 70 75 80	
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cttcagaaga gaaaactgaa gaaggagga atg gct gtg ggg ctt tgt aaa gcc	233
Met Ala Val Gly Leu Cys Lys Ala	
1 5	
atg tcc cag ggg ttg gtg acc ttc aga gat gtg gcg cta gac ttt tcc	281
Met Ser Gln Gly Leu Val Thr Phe Arg Asp Val Ala Leu Asp Phe Ser	
10 15 20	
caa gaa gag tgg gaa tgg ctg aag cca tct cag aag gat tta tac aga	329
Gln Glu Glu Trp Glu Trp Leu Lys Pro Ser Gln Lys Asp Leu Tyr Arg	
25 30 35 40	
gat gtc atg ttg gag aac tac agg aac ttg gta tgg ctt gga ctc tcc	377
Asp Val Met Leu Glu Asn Tyr Arg Asn Leu Val Trp Leu Gly Leu Ser	
45 50 55	
att tct aag ccc aac atg atc tcc tta ctg gag caa ggg aag gaa ccg	425
Ile Ser Lys Pro Asn Met Ile Ser Leu Leu Glu Gln Gly Lys Glu Pro	
60 65 70	
tgg atg gtg gag aga aag atg tca cag ggt cac tgt gca gac tgg gag	473
Trp Met Val Glu Arg Lys Met Ser Gln Gly His Cys Ala Asp Trp Glu	

75	80	85	
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gat gaa ata tcc cag gag atg gta atg gaa agg cta gca agt cat ggc Asp Glu Ile Ser Gln Glu Met Val Met Glu Arg Leu Ala Ser His Gly 105 110 115 120			569
ctt gaa tgc tcc agt ttc aga gaa gcc tgg aaa tat aag ggt gaa ttt Leu Glu Cys Ser Ser Phe Arg Glu Ala Trp Lys Tyr Lys Gly Glu Phe 125 130 135			617
gag cta cat cag gga aat gcg gag agg cat ttc atg caa gtg aca gct Glu Leu His Gln Gly Asn Ala Glu Arg His Phe Met Gln Val Thr Ala 140 145 150			665
gtt aag gaa atc tct act ggg aaa aga gac aat gaa ttt agt aat tct Val Lys Glu Ile Ser Thr Gly Lys Arg Asp Asn Glu Phe Ser Asn Ser 155 160 165			713
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cct acc ata cag caa gta cat aaa ttt gat att tat gat aaa ctc ttc Pro Thr Ile Gln Gln Val His Lys Phe Asp Ile Tyr Asp Lys Leu Phe 185 190 195 200			809
ccc caa aat tca gtc ata att gaa tat aaa aga ctc cat gct gag aag Pro Gln Asn Ser Val Ile Ile Glu Tyr Lys Arg Leu His Ala Glu Lys 205 210 215			857
gaa tct ttg ata ggt aat gaa tgt gaa gaa ttc aac cag agt acg tac Glu Ser Leu Ile Gly Asn Glu Cys Glu Glu Phe Asn Gln Ser Thr Tyr 220 225 230			905
ctt agt aaa gat ata gga att cct cct ggg gag aaa cct tat gaa agt Leu Ser Lys Asp Ile Gly Ile Pro Pro Gly Glu Lys Pro Tyr Glu Ser 235 240 245			953
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cag acc act cat ttt gga aaa tta ccc cat gga tac gat gaa tgt ggt Gln Thr Thr His Phe Gly Lys Leu Pro His Gly Tyr Asp Glu Cys Gly 265 270 275 280			1049
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agt gga gaa aaa cca tat gca tgc aat gac tgt gga aaa gcc ttt agc Ser Gly Glu Lys Pro Tyr Ala Cys Asn Asp Cys Gly Lys Ala Phe Ser 300 305 310			1145
cac gac ttc ttt ctc agt gaa cat caa aga act cat att ggg gag aaa His Asp Phe Phe Leu Ser Glu His Gln Arg Thr His Ile Gly Glu Lys 315 320 325			1193
cct tat gaa tgt aag gaa tgt aac aaa gct ttc aga cag agt gct cac Pro Tyr Glu Cys Lys Glu Cys Asn Lys Ala Phe Arg Gln Ser Ala His			1241

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345	350	355	360
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365	370	375	
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380	385	390	
aaa gcc ttc aga cag agt gct cac ctt aat caa cat cag agg att cac Lys Ala Phe Arg Gln Ser Ala His Leu Asn Gln His Gln Arg Ile His			1433
395	400	405	
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410	415	420	
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425	430	435	440
ccc ttc aaa tgt agt gaa tgt ggg aag acc ttt ggc tat cgc tca cac Pro Phe Lys Cys Ser Glu Cys Gly Lys Thr Phe Gly Tyr Arg Ser His			1577
445	450	455	
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460	465	470	
atc aaa tgt ggg aag ttt agg act gac tca caa ctt aat cga cat Ile Lys Cys Gly Lys Phe Phe Arg Thr Asp Ser Gln Leu Asn Arg His			1673
475	480	485	
cat aga att cac act gga gag aga cca ttt gaa tgc agt aaa tgt ggg His Arg Ile His Thr Gly Glu Arg Pro Phe Glu Cys Ser Lys Cys Gly			1721
490	495	500	
aaa gcc ttc agt gat gct tta gtt cta att cac cat aag aga agt cat Lys Ala Phe Ser Asp Ala Leu Val Leu Ile His His Lys Arg Ser His			1769
505	510	515	520
gca gga gag aaa ccc tat gaa tgt aac aaa tgt gga aag gcc ttc agt Ala Gly Glu Lys Pro Tyr Glu Cys Asn Lys Cys Gly Lys Ala Phe Ser			1817
525	530	535	
tgt ggc tca tat ctt aat caa cat caa aga att cat act gga gag aaa Cys Gly Ser Tyr Leu Asn Gln His Gln Arg Ile His Thr Gly Glu Lys			1865
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555	560	565	
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570	575	580	
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605		610	615	
gcc aaa gtg gca gag ccg gcg cggtt ggg aca gag ggc gca ctg agg Ala Lys Val Ala Glu Pro Ala Arg Ala Gly Thr Glu Ala Ala Leu Arg				2105
620		625	630	
ccg gcg ctg tcg gtg gct gag agc gcc aca agt ctc ggt ccg tta cac Pro Ala Leu Ser Val Ala Glu Ser Ala Thr Ser Leu Gly Pro Leu His				2153
635		640	645	
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650		655	660	
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665		670		
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		15	20	25
ggt cga ctc cgg gag aaa ctt ttc tct ggc tat gat agc tcc gtg cgg Gly Arg Leu Arg Glu Lys Leu Phe Ser Gly Tyr Asp Ser Ser Val Arg				145
		30	35	40
cca gcg cgg gag gtg gga gac cgt gtc agg gtc agc gtt ggt ctc atc Pro Ala Arg Glu Val Gly Asp Arg Val Arg Val Ser Val Gly Leu Ile				193
		45	50	55
ctg gcg caa ctc atc agc ctg aac gag aag gat gaa gag atg agc aca Leu Ala Gln Leu Ile Ser Leu Asn Glu Lys Asp Glu Glu Met Ser Thr				241
		60	65	70
			75	
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		80	85	90

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95 100 105	
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110 115 120	
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140 145 150 155	
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190 195 200	
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205 210 215	
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335 340 345	

cag atc ttc att cac aaa ctt ccg ctg tac ctg cgt cta aaa agg ccc Gln Ile Phe Ile His Lys Leu Pro Leu Tyr Leu Arg Leu Lys Arg Pro 350 355 360	1105
aaa ccc gag aga gac ctg atg ccg gag ccc cct cac tgt tct tct cca Lys Pro Glu Arg Asp Leu Met Pro Glu Pro Pro His Cys Ser Ser Pro 365 370 375	1153
gga agt ggc tgg ggt cg <sup>g</sup> gga aca gat gaa tat ttc atc cg <sup>g</sup> aag ccg Gly Ser Gly Trp Gly Arg Gly Thr Asp Glu Tyr Phe Ile Arg Lys Pro 380 385 390 395	1201
cca agt gat ttt ctc ttc ccc aaa ccc aat agg ttc cag cct gaa ctg Pro Ser Asp Phe Leu Phe Pro Lys Pro Asn Arg Phe Gln Pro Glu Leu 400 405 410	1249
tct gcc cct gat ctg cg <sup>g</sup> cga ttt atc gat ggt cca aac cg <sup>g</sup> gct gtg Ser Ala Pro Asp Leu Arg Arg Phe Ile Asp Gly Pro Asn Arg Ala Val 415 420 425	1297
gcc ctg ctt ccg gag cta cg <sup>g</sup> gag gtc gtc tcc tct atc agc tac atc Ala Leu Leu Pro Glu Leu Arg Glu Val Val Ser Ser Ile Ser Tyr Ile 430 435 440	1345
gct cga cag ctg cag gaa cag gag gac cac gat g <sup>c</sup> ctg aag gag gac Ala Arg Gln Leu Gln Glu Glu Asp His Asp Ala Leu Lys Glu Asp 445 450 455	1393
tgg cag ttt gtg gcc atg gta gtg gac cg <sup>g</sup> ctc ttc ctg tgg act ttc Trp Gln Phe Val Ala Met Val Val Asp Arg Leu Phe Leu Trp Thr Phe 460 465 470 475	1441
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 Gln His Pro His Ala Ser Arg Arg Leu Ala His Val Gly Pro Arg Leu  
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 Arg Pro Asp Leu Arg Gln Asp Leu Cys Leu Pro Pro Pro His Val  
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 Pro Leu Ala Phe Gly Pro Pro Pro Gln Ala Pro Ala Pro Arg Arg  
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cgc gca ggt ccc ttt gat gac gcgcag cct gag cca gac cag ggg gat 1423  
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 Pro Leu Glu Gly Gln Cys Pro Cys Cys Glu Lys Ser Leu Leu Trp Gly  
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 Asp Leu Ile Trp Leu Cys Gln Met Asp Thr Glu Lys Glu Val Glu Asp  
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 Ser Glu Leu Glu Ala His Trp Thr Asp Leu Leu Glu Thr \*  
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gca	gct	gct	tcc	ctc	act	ggg	tcc	tgc	gtc	ctt	ggg	cag	gct	atg	400	
Ala	Ala	Arg	Ala	Ser	Leu	Thr	Gly	Ser	Cys	Val	Leu	Gly	Gln	Ala	Met	
10			15			20					25					
ccc	ctg	ctg	ggg	ggg	gct	ggg	cca	tcc	ccg	gcc	agc	cac	gga	ccc	acg	448
Pro	Leu	Arg	Gly	Gly	Ala	Gly	Pro	Ser	Pro	Ala	Ser	His	Gly	Pro	Thr	
			30			35					40					
cat	gga	ccc	agc	gac	cca	cg	acc	tgc	tta	cct	ggg	cgc	ggc	gct	gg	496
His	Gly	Pro	Ser	Asp	Pro	Arg	Thr	Cys	Leu	Pro	Gly	Arg	Gly	Ala	Gly	
			45			50					55					
ggc	atg	cg	cca	ca	gga	agg	ggc	g	ctg	ggc	tgc	tgc	ggc	ctc	tgc	544
Gly	Met	Arg	Pro	His	Gly	Arg	Gly	Ala	Leu	Gly	Cys	Cys	Gly	Leu	Cys	
	60			65			70									
agc	ttc	ta	cc	tc	ca	gg	gg	gc	gg	at	at	ca	ca	gg	at	592
Ser	Phe	Tyr	Thr	Cys	His	Gly	Ala	Ala	Gly	Asp	Glu	Ile	Met	His	Gln	
	75			80			85									
gac	atc	gtc	cc	ct	tgt	gt	gc	gac	atc	ca	ga	ca	ca	ct	aa	640
Asp	Ile	Val	Pro	Leu	Cys	Ala	Ala	Asp	Ile	Gln	Asp	Gln	Leu	Lys	Lys	
	90			95			100						105			
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Arg	Phe	Ala	Tyr	Leu	Ser	Gly	Gly	Arg	Gly	Gln	Asp	Gly	Ser	Pro	Val	
	110			115			120									
atc	acc	ttc	cct	gac	ta	cc	gg	ttc	agc	ga	tt	cc	ga	aa	gg	736
Ile	Thr	Phe	Pro	Asp	Tyr	Pro	Ala	Phe	Ser	Glu	Ile	Pro	Asp	Lys	Glu	
	125			130			135									
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Phe	Gln	Asn	Val	Met	Thr	Tyr	Leu	Thr	Ser	Ile	Pro	Ser	Leu	Gln	Asp	
	140			145			150									
gct	ggc	atc	gga	ttc	atc	ctg	gt	ata	gac	cg	cg	gac	aaa	tgg		832

Ala Gly Ile Gly Phe Ile Leu Val Ile Asp Arg Arg Arg Asp Lys Trp			
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acc tcc gtg aag gcg tcc gtc ctg cgc atc gca gca tct ttc ccg gca			880
Thr Ser Val Lys Ala Ser Val Leu Arg Ile Ala Ala Ser Phe Pro Ala			
170	175	180	185
aac ctg cag ctc gtc ctc gtg ctt cgc ccg acg ggt ttt ttc caa agg			928
Asn Leu Gln Leu Val Leu Val Leu Arg Pro Thr Gly Phe Phe Gln Arg			
190	195	200	
act ctc tcc gac atc gct ttc aaa ttc aat aga gat gac ttt aag atg			976
Thr Leu Ser Asp Ile Ala Phe Lys Phe Asn Arg Asp Asp Phe Lys Met			
205	210	215	
aag gtg ccg gtc ata atg ctg agc tcc gta cca gac tta cac ggt tac			1024
Lys Val Pro Val Ile Met Leu Ser Ser Val Pro Asp Leu His Gly Tyr			
220	225	230	
atc gat aag tcg cag ctg acc gag gac ctg ggt ggg acc ctg gac tac			1072
Ile Asp Lys Ser Gln Leu Thr Glu Asp Leu Gly Gly Thr Leu Asp Tyr			
235	240	245	
tgc cac tcc cgg tgg ctg tgc cag cgc acg gcc atc gaa agt ttc gcc			1120
Cys His Ser Arg Trp Leu Cys Gln Arg Thr Ala Ile Glu Ser Phe Ala			
250	255	260	265
ctc atg gtg aag cag acg gct cag atg ctg cag tcc ttc ggg acc gag			1168
Leu Met Val Lys Gln Thr Ala Gln Met Leu Gln Ser Phe Gly Thr Glu			
270	275	280	
ctg gct gaa aca gag ctg ccc aat gac gtc cag tcg aca agc tca gtg			1216
Leu Ala Glu Thr Glu Leu Pro Asn Asp Val Gln Ser Thr Ser Val			
285	290	295	
ctg tgt gcg cac aca gag aag aag gac aag gcg aag gag gat ttg agg			1264
Leu Cys Ala His Thr Glu Lys Lys Asp Lys Ala Lys Glu Asp Leu Arg			
300	305	310	
ctg gca ctg aaa gag ggg cac agt gtc ctg gag agc ctc agg gag ctg			1312
Leu Ala Leu Lys Glu Gly His Ser Val Leu Glu Ser Leu Arg Glu Leu			
315	320	325	
cag gct gag ggc tca gag ccc agt gtg aac cag gac cag ctt gac aac			1360
Gln Ala Glu Gly Ser Glu Pro Ser Val Asn Gln Asp Gln Leu Asp Asn			
330	335	340	345
cag gcc acc gtg cag agg ctc ctg gcc cag ctg aac gaa acc gag gct			1408
Gln Ala Thr Val Gln Arg Leu Leu Ala Gln Leu Asn Glu Thr Glu Ala			
350	355	360	
gcc ttc gat gag ttc tgg gca aag cat cag cag aaa ctg gag cag tgt			1456
Ala Phe Asp Glu Phe Trp Ala Lys His Gln Gln Lys Leu Glu Gln Cys			
365	370	375	
ctg cag ctc cgg cac ttt gag cag ggc ttc cgg gag gtc aaa gcc atc			1504
Leu Gln Leu Arg His Phe Glu Gln Gly Phe Arg Glu Val Lys Ala Ile			
380	385	390	
ttg gac gca gcg tcc cag aag ata gca acc ttc aca gac atc ggc aac			1552
Leu Asp Ala Ala Ser Gln Lys Ile Ala Thr Phe Thr Asp Ile Gly Asn			
395	400	405	
agc ctg gcg cat gtg gag cac ctg ctg agg gac ctg gcc agc ttc gag			1600

Ser Leu Ala His Val Glu His Leu Leu Arg Asp Leu Ala Ser Phe Glu					
410	415	420	425		
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Glu Lys Ser Gly Val Ala Val Glu Arg Ala Arg Ala Leu Ser Leu Asp					
430	435	440			
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Gly Glu Gln Leu Ile Gly Asn Lys His Tyr Ala Val Asp Ser Ile Arg					
445	450	455			
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Pro Lys Cys Gln Glu Leu Arg His Leu Cys Asp Gln Phe Ser Ala Glu					
460	465	470			
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Ile Ala Arg Arg Gly Leu Leu Ser Lys Ser Leu Glu Leu His Arg					
475	480	485			
cgc ctg gag acg tcc atg aag tgg tgt gat gaa ggg att tac ctg ctg					1840
Arg Leu Glu Thr Ser Met Lys Trp Cys Asp Glu Gly Ile Tyr Leu Leu					
490	495	500	505		
gcc tca caa cct gtg gac aag tgc cag tcc cag gac ggc gcg gag gct					1888
Ala Ser Gln Pro Val Asp Lys Cys Gln Ser Gln Asp Gly Ala Glu Ala					
510	515	520			
gcc ctc cag gaa atc gag aag ttt ttg gag acc ggt gcg gaa aat aag					1936
Ala Leu Gln Glu Ile Lys Phe Leu Glu Thr Gly Ala Glu Asn Lys					
525	530	535			
atc cag gag ctc aac gcg att tac aag gaa tac gaa tcc atc ctc aac					1984
Ile Gln Glu Leu Asn Ala Ile Tyr Lys Glu Tyr Glu Ser Ile Leu Asn					
540	545	550			
caa gat ctc atg gag cac gtg cga aag gtc ttc cag aag cag gca agc					2032
Gln Asp Leu Met Glu His Val Arg Lys Val Phe Gln Lys Gln Ala Ser					
555	560	565			
atg gag gag gtg ttc cac cgc agg cag gcc agc ctg aag aag ctg gcg					2080
Met Glu Glu Val Phe His Arg Arg Gln Ala Ser Leu Lys Lys Leu Ala					
570	575	580	585		
gcc agg cag acg cgg ccc gtg cag ccg gtg gcc ccc aga ccc gag gca					2128
Ala Arg Gln Thr Arg Pro Val Gln Pro Val Ala Pro Arg Pro Glu Ala					
590	595	600			
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Leu Ala Lys Ser Pro Cys Pro Ser Pro Gly Ile Arg Arg Gly Ser Glu					
605	610	615			
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Asn Ser Ser Glu Gly Gly Ala Leu Arg Arg Gly Pro Tyr Arg Arg					
620	625	630			
gcc aag agt gag gtg agt gag agc cgg cag ggc cgc ggc tca gcg ggg					2272
Ala Lys Ser Glu Val Ser Glu Ser Arg Gln Gly Arg Gly Ser Ala Gly					
635	640	645			
gag gag gag gaa agc ctg gcc atc ctg cgc agg cac gtg atg agc gag					2320
Glu Glu Glu Ser Leu Ala Ile Leu Arg Arg His Val Met Ser Glu					
650	655	660	665		
ctc ctg gac aca gaa cgg gcc tac gtg gag gag ctg ctg tgc gtc ctg					2368

Leu Leu Asp Thr Glu Arg Ala Tyr Val Glu Glu Leu Leu Cys Val Leu			
670	675	680	
gag ggc tac gcc gcg gag atg gat aac cca ctg atg gct cac ctc ctg			2416
Glu Gly Tyr Ala Ala Glu Met Asp Asn Pro Leu Met Ala His Leu Leu			
685	690	695	
tca aca ggc ctt cac aac aag aag gat gtt ttg ttt gga aac atg gag			2464
Ser Thr Gly Leu His Asn Lys Lys Asp Val Leu Phe Gly Asn Met Glu			
700	705	710	
gaa atc tat cac ttc cac aac agg ata ttc ctc agg gag ctg gaa aac			2512
Glu Ile Tyr His Phe His Asn Arg Ile Phe Leu Arg Glu Leu Glu Asn			
715	720	725	
tac act gac tgc cca gaa ctg gtt gga aga tgc ttt ctg gag agg atg			2560
Tyr Thr Asp Cys Pro Glu Leu Val Gly Arg Cys Phe Leu Glu Arg Met			
730	735	740	745
gaa gat ttc cag atc tat gag aag tac tgt cag aac aag ccc cgc tct			2608
Glu Asp Phe Gln Ile Tyr Glu Lys Tyr Cys Gln Asn Lys Pro Arg Ser			
750	755	760	
gag agc ctg tgg aga cag tgc tcc gac tgc ccg ttt ttc cag gaa tgc			2656
Glu Ser Leu Trp Arg Gln Cys Ser Asp Cys Pro Phe Phe Gln Glu Cys			
765	770	775	
cag aga aag ctg gac cac aag ctg agc ctg gac tcc tac ctg ctg aag			2704
Gln Arg Lys Leu Asp His Lys Leu Ser Leu Asp Ser Tyr Leu Leu Lys			
780	785	790	
cca gtg cag agg atc acc aag tac cag ctg ctg ctc aag gaa atg ctg			2752
Pro Val Gln Arg Ile Thr Lys Tyr Gln Leu Leu Leu Lys Glu Met Leu			
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aaa tac agc agg aac tgc gag ggg gct gag gac ctg cag gag ggc ctg			2800
Lys Tyr Ser Arg Asn Cys Glu Gly Ala Glu Asp Leu Gln Glu Ala Leu			
810	815	820	825
agc tcc atc ctg ggc atc ctg aag gcc gtg aac gac tcc atg cac ctc			2848
Ser Ser Ile Leu Gly Ile Leu Lys Ala Val Asn Asp Ser Met His Leu			
830	835	840	
atc gct atc acc ggc tat gac ggg aat ctc ggc gac ctg ggc aag ctg			2896
Ile Ala Ile Thr Gly Tyr Asp Gly Asn Leu Gly Asp Leu Gly Lys Leu			
845	850	855	
ctg atg cag ggc tcg ttc agc gtc tgg acc gac cac aag agg ggc cac			2944
Leu Met Gln Gly Ser Phe Ser Val Trp Thr Asp His Lys Arg Gly His			
860	865	870	
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Thr Lys Val Lys Glu Leu Ala Arg Phe Lys Pro Met Gln Arg His Leu			
875	880	885	
ttc ctg cac gag aag gca gtg ctc ttc tgc aag aag agg gag gag aat			3040
Phe Leu His Glu Lys Ala Val Leu Phe Cys Lys Lys Arg Glu Glu Asn			
890	895	900	905
ggg gag ggg tat gag aaa gct ccc tcc tac agc tac aag cag tcc tta			3088
Gly Glu Gly Tyr Glu Lys Ala Pro Ser Tyr Ser Tyr Lys Gln Ser Leu			
910	915	920	
aac atg gct gcc gtt ggc att acg gag aac gtg aag gga gat gct aag			3136

Asn Met Ala Ala Val Gly Ile Thr Glu Asn Val Lys Gly Asp Ala Lys			
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aag ttc gag atc tgg tac aac gcg cgc gag gag gtc tac atc gtc cag			3184
Lys Phe Glu Ile Trp Tyr Asn Ala Arg Glu Glu Val Tyr Ile Val Gln			
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Ala Pro Thr Pro Glu Ile Lys Ala Ala Trp Val Asn Glu Ile Arg Lys			
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gtg ctg acc agc cag ctg cag gct tgt aga gaa gcc agc cag cac cggtt			3280
Val Leu Thr Ser Gln Leu Gln Ala Cys Arg Glu Ala Ser Gln His Arg			
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Ala Leu Glu Gln Ser Gln Ser Leu Pro Leu Pro Ala Pro Thr Ser Thr			
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agt ccc tca aga gga aac tca agg aac atc aag aag ctg gaa gaa agg			3376
Ser Pro Ser Arg Gly Asn Ser Arg Asn Ile Lys Lys Leu Glu Glu Arg			
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Lys Thr Asp Pro Leu Ser Leu Glu Gly Tyr Val Ser Ser Ala Pro Leu			
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Thr Lys Pro Pro Glu Lys Gly Lys Trp Ser Lys Thr Ser His Ser			
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Leu Glu Ala Pro Glu Asp Asp Gly Gly Trp Ser Ser Ala Glu Glu Gln			
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att aac tcg tcc gac gca gag gag gac ggc ggg ttg ggc ccc aag aag			3568
Ile Asn Ser Ser Asp Ala Glu Glu Asp Gly Gly Leu Gly Pro Lys Lys			
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Leu Val Pro Gly Lys Tyr Thr Val Val Ala Asp His Glu Lys Gly Gly			
1085	1090	1095	
ccc gat gcg ctg cgc gtg agg agc ggg gac gtg gtg gag ctg gtg cag			3664
Pro Asp Ala Leu Arg Val Arg Ser Gly Asp Val Val Glu Leu Val Gln			
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Glu Gly Asp Glu Gly Leu Trp *			
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agcagcgcct	gttcccgggg	cagatccagg	ttcaggtcct	ggctataagt	cacc atg	237
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gca cag caa gct gcc gat aag tat ctc tat gtg gat aaa aac ttc atc						285
Ala Gln Gln Ala Ala Asp Lys Tyr Leu Tyr Val Asp Lys Asn Phe Ile						
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aac aat ccg ctg gcc cag gac tgg gct gcc aag aag ctg gta tgg						333
Asn Asn Pro Leu Ala Gln Ala Asp Trp Ala Ala Lys Lys Leu Val Trp						
20	25				30	
gtg cct tcc gac aag agt ggc ttt gag cca gcc agc ctc aag gag gag						381
Val Pro Ser Asp Lys Ser Gly Phe Glu Pro Ala Ser Leu Lys Glu Glu						
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Val Gly Glu Glu Ala Ile Val Glu Leu Val Glu Asn Gly Lys Lys Val						
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Lys Val Asn Lys Asp Asp Ile Gln Lys Met Asn Pro Pro Lys Phe Ser						
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Lys Val Glu Asp Met Ala Glu Leu Thr Cys Leu Asn Glu Ala Ser Val						
85	90				95	
ctg cac aac ctc aag gag cgt tac tac tca ggg ctc atc tac acc tat						573
Leu His Asn Leu Lys Glu Arg Tyr Tyr Ser Gly Leu Ile Tyr Thr Tyr						
100	105				110	
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Ser Gly Leu Phe Cys Val Val Ile Asn Pro Tyr Lys Asn Leu Pro Ile						
115	120				125	
tac tct gaa gag att gtg gaa atg tac aag ggc aag aag agg cac gag						669
Tyr Ser Glu Glu Ile Val Glu Met Tyr Lys Gly Lys Lys Arg His Glu						
130	135				140	
135	140				145	
atg ccc cct cac atc tat gcc atc aca gac acc gcc tac agg agt atg						717
Met Pro Pro His Ile Tyr Ala Ile Thr Asp Thr Ala Tyr Arg Ser Met						
150	155				160	
atg caa gac cga gaa gat caa tcc atc ttg tgc act ggt gaa tct gga						765
Met Gln Asp Arg Glu Asp Gln Ser Ile Leu Cys Thr Gly Glu Ser Gly						
165	170				175	
gct ggc aag acg gag aac acc aag aag gtc atc cag tat ctg gcg tac						813
Ala Gly Lys Thr Glu Asn Thr Lys Lys Val Ile Gln Tyr Leu Ala Tyr						
180	185				190	
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Val Ala Ser Ser His Ser Lys Lys Asp Gln Gly Glu Leu Glu Arg						

195	200	205	
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acc gtg aag aat gac aac tcc tcc cgc ttc ggc aaa ttc att cgc atc Thr Val Lys Asn Asp Asn Ser Ser Arg Phe Gly Lys Phe Ile Arg Ile 230	235	240	957
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ctt ttg gag aaa tct cgt gct atc cgc caa gcc aag gaa gaa cgg acc Leu Leu Glu Lys Ser Arg Ala Ile Arg Gln Ala Lys Glu Glu Arg Thr 260	265	270	1053
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gct gcc caa aag gtg tcc cat ctc ttg ggt atc aat gtg acc gat ttc Ala Ala Gln Lys Val Ser His Leu Leu Gly Ile Asn Val Thr Asp Phe 370	375	380	1389
acc aga gga atc ctc acc ccg cgc atc aag gtg gga cgg gat tac gtc Thr Arg Gly Ile Leu Thr Pro Arg Ile Lys Val Gly Arg Asp Tyr Val 390	395	400	1437
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cac acc atg ttc atc ctg gag cag gag gag tac cag cgc gag ggc atc His Thr Met Phe Ile Leu Glu Gln Glu Glu Tyr Gln Arg Glu Gly Ile 485	490	495		1725
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gat tac aaa gct gac gag tgg ctg atg aag aac atg gat ccc ctg aat Asp Tyr Lys Ala Asp Glu Trp Leu Met Lys Asn Met Asp Pro Leu Asn 580	585	590		2013
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ccc aac cac gag aag aag gcc ggc aag ctg gac ccg cat ctc gtg ctg Pro Asn His Glu Lys Lys Ala Gly Lys Leu Asp Pro His Leu Val Leu 675	680	685		2301
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gcc aag tat gca gag gag cgc gac cgg gct gag gcg gag gcc cga gag Ala Lys Tyr Ala Glu Glu Arg Asp Arg Ala Glu Ala Glu Ala Arg Glu 1460	1465	1470	4653
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1475	1480	1485	
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1490	1495	1500	1505
atg gag gac ctt atg agc tcc aag gat gat gtg ggc aag agt gtc cac Met Glu Asp Leu Met Ser Ser Lys Asp Asp Val Gly Lys Ser Val His			4797
1510	1515	1520	
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1525	1530	1535	
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1540	1545	1550	
gcc aag ctg cgg ttg gag gtc aac ctg cag gcc atg aag gcc cag ttc Ala Lys Leu Arg Leu Glu Val Asn Leu Gln Ala Met Lys Ala Gln Phe			4941
1555	1560	1565	
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1570	1575	1580	1585
cag ctg gtc aga cag gtg cgg gag atg gag gca gag ctg gag gac gag Gln Leu Val Arg Gln Val Arg Glu Met Glu Ala Glu Leu Glu Asp Glu			5037
1590	1595	1600	
agg aag cag cgc tcg atg gca gtg gcc cgg aag aag ctg gag atg Arg Lys Gln Arg Ser Met Ala Val Ala Ala Arg Lys Lys Leu Glu Met			5085
1605	1610	1615	
gac ctg aag gac ctg gag gcg cac atc gac tcg gcc aac aag aac cgg Asp Leu Lys Asp Leu Glu Ala His Ile Asp Ser Ala Asn Lys Asn Arg			5133
1620	1625	1630	
gac gaa gcc atc aaa cag ctg cgg aag ctg cag gcc cag atg aag gac Asp Glu Ala Ile Lys Gln Leu Arg Lys Leu Gln Ala Gln Met Lys Asp			5181
1635	1640	1645	
tgc atg cgc gag ctg gat gac acc cgc gcc tct cgt gag gag atc ctg Cys Met Arg Glu Leu Asp Asp Thr Arg Ala Ser Arg Glu Glu Ile Leu			5229
1650	1655	1660	1665
gcc cag gcc aaa gag aac gag aag aag ctg aag acg atg gag gcc gag Ala Gln Ala Lys Glu Asn Glu Lys Lys Leu Lys Ser Met Glu Ala Glu			5277
1670	1675	1680	
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1685	1690	1695	
cag gcc cag cag gag cgg gat gag ctg gct gac gag atc gcc aac acg Gln Ala Gln Gln Glu Arg Asp Glu Leu Ala Asp Glu Ile Ala Asn Ser			5373
1700	1705	1710	
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1715	1720	1725	
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1750	1755	1760		
atc aac acc gac ctg aac ctg gag cgc agc cac gcc cag aag aac gag Ile Asn Thr Asp Leu Asn Leu Glu Arg Ser His Ala Gln Lys Asn Glu				5565
1765	1770	1775		
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1780	1785	1790		
ctg cag gag atg gag ggc act gtc aag tcc aag tac aag gcc tcc atc Leu Gln Glu Met Glu Gly Thr Val Lys Ser Lys Tyr Lys Ala Ser Ile				5661
1795	1800	1805		
acc gcc ctc gag gcc aag att gca cag ctg gag gag cag ctg gac aac Thr Ala Leu Glu Ala Lys Ile Ala Gln Leu Glu Gln Leu Asp Asn				5709
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1830	1835	1840		
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1845	1850	1855		
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1860	1865	1870		
cag ctc aag cgg cag ctg gag gcc gaa gag gag gcc cag cgg gcc Gln Leu Lys Arg Gln Leu Glu Ala Glu Glu Ala Gln Arg Ala				5901
1875	1880	1885		
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1890	1895	1900	1905	
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1910	1915	1920		
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1925	1930	1935		
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1940	1945	1950		
gct gag gcc aaa cct gcc gaa taa gcctttctc ctgcagcctg agatggatgg Ala Glu Ala Lys Pro Ala Glu *				6147
1955	1960			
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 Met Ser Leu Arg Val His  
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Thr Leu Pro Thr Leu Leu Gly Ala Val Val Arg Pro Gly Cys Arg Glu  
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 Leu Leu Cys Leu Leu Met Ile Thr Val Thr Val Gly Pro Gly Ala Ser  
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 Gly Val Cys Pro Thr Ala Cys Ile Cys Ala Thr Asp Ile Val Ser Cys  
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 Thr Asn Lys Asn Leu Ser Lys Val Pro Gly Asn Leu Phe Arg Leu Ile  
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 Lys Arg Leu Asp Leu Ser Tyr Asn Arg Ile Gly Leu Leu Asp Ser Glu  
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 Trp Ile Pro Val Ser Phe Ala Lys Leu Asn Thr Leu Ile Leu Arg His  
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 Asn Asn Ile Thr Ser Ile Ser Thr Gly Ser Phe Ser Thr Thr Pro Asn  
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 Ala Val Phe Gln Glu Leu Lys Val Leu Glu Val Leu Leu Tyr Asn  
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 Asn His Ile Ser Tyr Leu Asp Pro Ser Ala Phe Gly Gly Leu Ser Gln  
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 Leu Gln Lys Leu Tyr Leu Ser Gly Asn Phe Leu Thr Gln Phe Pro Met  
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 Asp Leu Tyr Val Gly Arg Phe Lys Leu Ala Glu Leu Met Phe Leu Asp  
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 gtt tct tat aac cga att cct tcc atg cca atg cac cac ata aat tta 856  
 Val Ser Tyr Asn Arg Ile Pro Ser Met Pro Met His His Ile Asn Leu  
 200 205 210  
 gtg cca gga aaa cag ctg aga ggc atc tac ctt cat gga aac cca ttt 904  
 Val Pro Gly Lys Gln Leu Arg Gly Ile Tyr Leu His Gly Asn Pro Phe  
 215 220 225 230  
 gtc tgt gac tgt tcc ctg tac tcc ttg ctg gtc ttt tgg tat cgt agg 952  
 Val Cys Asp Cys Ser Leu Tyr Ser Leu Leu Val Phe Trp Tyr Arg Arg  
 235 240 245  
 cac ttt agc tca gtg atg gat ttt aag aac gat tac acc tgt cgc ctg 1000  
 His Phe Ser Ser Val Met Asp Phe Lys Asn Asp Tyr Thr Cys Arg Leu  
 250 255 260  
 tgg tct gac tcc agg cac tcg cgt cag gta ctt ctg ctc cag gat agc 1048

Trp Ser Asp Ser Arg His Ser Arg Gln Val Leu Leu Leu Gln Asp Ser  
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ttt atg aat tgc tct gac agc atc atc aat ggt tcc ttt cgt gcg ctt        1096  
 Phe Met Asn Cys Ser Asp Ser Ile Ile Asn Gly Ser Phe Arg Ala Leu  
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ggc ttt att cat gag gct cag gtc ggg gaa aga ctg atg gtc cac tgt        1144  
 Gly Phe Ile His Glu Ala Gln Val Gly Glu Arg Leu Met Val His Cys  
 295                    300                    305                    310

gac agc aag aca ggt aat gca aat acg gat ttc atc tgg gtg ggt cca        1192  
 Asp Ser Lys Thr Gly Asn Ala Asn Thr Asp Phe Ile Trp Val Gly Pro  
 315                    320                    325

gat aac aga ctg cta gag ccg gat aaa gag atg gaa aac ttt tac gtg        1240  
 Asp Asn Arg Leu Leu Glu Pro Asp Lys Glu Met Glu Asn Phe Tyr Val  
 330                    335                    340

ttt cac aat gga agt ctg gtt ata gaa agc cct cgt ttt gag gat gct        1288  
 Phe His Asn Gly Ser Leu Val Ile Glu Ser Pro Arg Phe Glu Asp Ala  
 345                    350                    355

gga gtg tat tct tgt atc gca atg aat aag caa cgc ctg tta aat gaa        1336  
 Gly Val Tyr Ser Cys Ile Ala Met Asn Lys Gln Arg Leu Leu Asn Glu  
 360                    365                    370

act gtg gac gtc aca ata aat gtg agc aat ttc act gta agc aga tcc        1384  
 Thr Val Asp Val Thr Ile Asn Val Ser Asn Phe Thr Val Ser Arg Ser  
 375                    380                    385                    390

cat gct cat gag gca ttt aac aca gct ttt acc act ctt gct gct tgc        1432  
 His Ala His Glu Ala Phe Asn Thr Ala Phe Thr Thr Leu Ala Ala Cys  
 395                    400                    405

gtg gcc agt atc gtt ttg gta ctt ttg tac ctc tat ctg act cca tgc        1480  
 Val Ala Ser Ile Val Leu Val Leu Tyr Leu Tyr Leu Thr Pro Cys  
 410                    415                    420

ccc tgc aag tgt aaa acc aag aga cag aaa aat atg cta cac caa agc        1528  
 Pro Cys Lys Cys Lys Thr Lys Arg Gln Lys Asn Met Leu His Gln Ser  
 425                    430                    435

aat gcc cat tca tcg att ctc agt cct ggc ccc gct agt gat gcc tcc        1576  
 Asn Ala His Ser Ser Ile Leu Ser Pro Gly Pro Ala Ser Asp Ala Ser  
 440                    445                    450

gct gat gaa cgg aag gca ggt gca ggt aaa aga gtg gtg ttt ttg gaa        1624  
 Ala Asp Glu Arg Lys Ala Gly Ala Gly Lys Arg Val Val Phe Leu Glu  
 455                    460                    465                    470

ccc ctg aag gat act gca gca ggg cag aac ggg aaa gtc agg ctc ttt        1672  
 Pro Leu Lys Asp Thr Ala Ala Gly Gln Asn Gly Lys Val Arg Leu Phe  
 475                    480                    485

ccc agc gag gca gtg ata gct gag ggc atc cta aag tcc acg agg ggg        1720  
 Pro Ser Glu Ala Val Ile Ala Glu Gly Ile Leu Lys Ser Thr Arg Gly  
 490                    495                    500

aaa tct gac tca gat tca gtc aat tca gtg ttt tct gac aca cct ttt        1768  
 Lys Ser Asp Ser Asp Ser Val Asn Ser Val Phe Ser Asp Thr Pro Phe  
 505                    510                    515

gtg gcg tcc act taa tttgtgccta tatttgtatg atgtcataat ttaatctgtt        1823

Val Ala Ser Thr \*  
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Met Pro Glu  
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gat gta cga gaa aaa aag gaa aat ctt cta ctc aat tct gag aga tct 165  
Asp Val Arg Glu Lys Lys Glu Asn Leu Leu Leu Asn Ser Glu Arg Ser  
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act agg ctc tta aca aag acc agt cat tca caa gga ggg gat caa gct 213  
Thr Arg Leu Leu Thr Lys Ser His Ser Gln Gly Gly Asp Gln Ala  
20 25 30 35

tta agt aag tcc aca ggg tca cca aca gag aag ttg att gaa aaa cgt 261  
Leu Ser Lys Ser Thr Gly Ser Pro Thr Glu Lys Leu Ile Glu Lys Arg  
40 45 50

caa gga gct aag act gtt ttt aac aag ttc agc aac atg aat tgg cca 309  
Gln Gly Ala Lys Thr Val Phe Asn Lys Phe Ser Asn Met Asn Trp Pro  
55 60 65

gtg gac att cac cct tta aac aaa agt tta gtc aaa gat aat aaa tgg 357  
Val Asp Ile His Pro Leu Asn Lys Ser Leu Val Lys Asp Asn Lys Trp  
70 75 80

aag aaa act gag gag acc caa gag aaa cga agg tct ttc ctt cag gag 405  
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85 90 95

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100 105 110 115

cat aca gta tcc aga atc tat gta gaa gat aaa cac aaa atc tta tat 501  
His Thr Val Ser Arg Ile Tyr Val Glu Asp Lys His Lys Ile Leu Tyr  
120 125 130

tgt gag gta cct aag gct ggc tgt tcc aat tgg aaa aga att ctg atg 549  
Cys Glu Val Pro Lys Ala Gly Cys Ser Asn Trp Lys Arg Ile Leu Met  
135 140 145

gta cta aat gga ttg gct tcc tct gca tac aac atc tcc cac aat gct 597  
Val Leu Asn Gly Leu Ala Ser Ser Ala Tyr Asn Ile Ser His Asn Ala  
150 155 160

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ggg ata tat acc cgc tta aat act tac acc aaa gct gtg ttt gtt cgt Gly Ile Tyr Thr Arg Leu Asn Thr Tyr Thr Lys Ala Val Phe Val Arg 180                   185                   190                   195	693
gat ccc atg gaa aga tta gta tca gcc ttt agg gac aaa ttt gaa cac Asp Pro Met Glu Arg Leu Val Ser Ala Phe Arg Asp Lys Phe Glu His 200                   205                   210	741
ccc aat agt tat tac cat cca gta ttc gga aag gca att atc aag aaa Pro Asn Ser Tyr Tyr His Pro Val Phe Gly Lys Ala Ile Ile Lys Lys 215                   220                   225	789
tat cga cca aat gcc tgt gaa gaa gca tta att aat gga tct gga gtc Tyr Arg Pro Asn Ala Cys Glu Ala Leu Ile Asn Gly Ser Gly Val 230                   235                   240	837
aag ttc aaa gag ttt atc cac tac ttg ctg gat tcc cac cgt cca gta Lys Phe Lys Glu Phe Ile His Tyr Leu Leu Asp Ser His Arg Pro Val 245                   250                   255	885
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ttg atc aac tat gat ttt gta ggg aaa ttt gag act ttg gaa gaa gat Leu Ile Asn Tyr Asp Phe Val Gly Lys Phe Glu Thr Leu Glu Asp 280                   285                   290	981
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ccc aac ttt aag gat agg cac tct tcc gat gaa aga acc aat gct caa Pro Asn Phe Lys Asp Arg His Ser Ser Asp Glu Arg Thr Asn Ala Gln 310                   315                   320	1077
gtc gtg aga cag tat tta aag gat ctg act aga act gag aga caa tta Val Val Arg Gln Tyr Leu Lys Asp Leu Thr Arg Thr Glu Arg Gln Leu 325                   330                   335	1125
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cca ttt ttg tag ttt gcattcattt tctaaaaccc tgtataact taatgatgat Pro Phe Leu *	1228
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cagccccagct ctgagggccc accaggcaact gcctacccac ctgccccacg gcccggccca	1680
ctccctggcc ctcatccag cctcgccagt ggcaatgagg atgaggacga cgatgaggca	1740
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agccgg	atg cct ctc aag tca cct gtg ccc ttt cta cct ggg acg agc		1848
	Met Pro Leu Lys Ser Pro Val Pro Phe Leu Pro Gly Thr Ser		
1	5	10	
ccc tcg gct gat ggg cct gac tct ttc agt tgc ttc gaa gcc atc			1896
Pro Ser Ala Asp Gly Pro Asp Ser Phe Ser Cys Val Phe Glu Ala Ile			
15	20	25	30
ctg gag tca cac cgg gcc aaa ggc acc tcc tat acc agc ctc gcc tcg			1944
Leu Glu Ser His Arg Ala Lys Gly Thr Ser Tyr Thr Ser Leu Ala Ser			
35	40	45	
ctg gag gcc ttg gcc tca cct ggc cca acc cag agc ccc ttc ttc acc			1992
Leu Glu Ala Leu Ala Ser Pro Gly Pro Thr Gln Ser Pro Phe Phe Thr			
50	55	60	
ttt gag ctg cct ccc caa ccc cct gca ccc cgg ccc gac cca cca gct			2040
Phe Glu Leu Pro Pro Gln Pro Pro Ala Pro Arg Pro Asp Pro Pro Ala			
65	70	75	
ccc gcc cca ctt gcc cct ctt gaa ccg gat tct ggt acc agc tct gct			2088
Pro Ala Pro Leu Ala Pro Leu Glu Pro Asp Ser Gly Thr Ser Ser Ala			
80	85	90	
gct gat ggt cct tgg aca cag aga ggg gag gag gag gca gag gcc			2136
Ala Asp Gly Pro Trp Thr Gln Arg Gly Glu Glu Glu Ala Glu Ala			
95	100	105	110
aga gcc aag ctg gcc cca ggg agg gag ccc cct agt ccc tgc cac tca			2184
Arg Ala Lys Leu Ala Pro Gly Arg Glu Pro Pro Ser Pro Cys His Ser			
115	120	125	
gag gac agc ctt ggg ctg ggg gca gca ccc ctt ggc agc gaa cca ccc			2232
Glu Asp Ser Leu Gly Leu Gly Ala Ala Pro Leu Gly Ser Glu Pro Pro			
130	135	140	
ctg agc cag ctg gtg tcc gac tca gac tac ctg gac agc aca gag			2280
Leu Ser Gln Leu Val Ser Asp Ser Asp Ser Glu Leu Asp Ser Thr Glu			
145	150	155	
cgg ctg gcc ctg gga agc aca gac acc ttg tcc aat ggg cag aaa gcg			2328
Arg Leu Ala Leu Gly Ser Thr Asp Thr Leu Ser Asn Gly Gln Lys Ala			
160	165	170	
gac ctg gag gct gcg cag ctg gcc aag agg ctg tac cga cta gat			2376
Asp Leu Glu Ala Ala Gln Arg Leu Ala Lys Arg Leu Tyr Arg Leu Asp			
175	180	185	190
ggc ttc agg aag gcc gat gtg gcc cgg cac ctg ggc aag aac aat gac			2424
Gly Phe Arg Lys Ala Asp Val Ala Arg His Leu Gly Lys Asn Asn Asp			
195	200	205	
ttc agc aaa ctg gtg gct ggg gag tac ctc aag ttc ttt gtc ttc acg			2472
Phe Ser Lys Leu Val Ala Gly Glu Tyr Leu Lys Phe Phe Val Phe Thr			
210	215	220	
ggc atg act ctg gac caa gct ctc agg gtg ttt ctg aag gag ctg gcc			2520
Gly Met Thr Leu Asp Gln Ala Leu Arg Val Phe Leu Lys Glu Leu Ala			
225	230	235	
tta atg ggt gag acc cag gaa cga gag cgc gtg ctg gcc cac ttc tcc			2568
Leu Met Gly Glu Thr Gln Glu Arg Glu Arg Val Leu Ala His Phe Ser			
240	245	250	

cag cga tac ttc cag tgc aat cct gaa gcc ctg tcc tca gag gac ggc Gln Arg Tyr Phe Gln Cys Asn Pro Glu Ala Leu Ser Ser Glu Asp Gly 255                   260                   265                   270	2616
gcc cac acg ctg acc tgt gcg ctc atg ctg ctc aac acg gat ctc cac Ala His Thr Leu Thr Cys Ala Leu Met Leu Leu Asn Thr Asp Leu His 275                   280                   285	2664
ggc cat aac atc ggg aag cgc atg acc tgc ggg gac ttc atc ggg aac Gly His Asn Ile Gly Lys Arg Met Thr Cys Gly Asp Phe Ile Gly Asn 290                   295                   300	2712
ctg gag ggc ctc aat gat ggc ggc gac ttc cct agg gag ctg ctc aag Leu Glu Gly Leu Asn Asp Gly Asp Phe Pro Arg Glu Leu Leu Lys 305                   310                   315	2760
gcc ttg tac agc tcc atc aag aat gag aag ctg cag tgg gcc ata gac Ala Leu Tyr Ser Ser Ile Lys Asn Glu Lys Leu Gln Trp Ala Ile Asp 320                   325                   330	2808
gag gag gag ctg aga cgc tct ctg tct gag ttg gcc gac ccc aac ccc Glu Glu Glu Leu Arg Arg Ser Leu Ser Glu Leu Ala Asp Pro Asn Pro 335                   340                   345                   350	2856
aag gtc atc aag cgg atc agc ggg ggc agt ggc agt ggc tcc agc cct Lys Val Ile Lys Arg Ile Ser Gly Gly Ser Gly Ser Ser Pro 355                   360                   365	2904
ttc ctg gac ctg act ccc gag cct ggg gct gcc gtc tac aag cac ggg Phe Leu Asp Leu Thr Pro Glu Pro Gly Ala Ala Val Tyr Lys His Gly 370                   375                   380	2952
gcc ctg gtg cga aag gtg cac gca gac cct gac tgc agg aag aca cct Ala Leu Val Arg Lys Val His Ala Asp Pro Asp Cys Arg Lys Thr Pro 385                   390                   395	3000
cg <sup>g</sup> ggc aag cg <sup>g</sup> gg <sup>c</sup> tgg aag ag <sup>c</sup> tt <sup>c</sup> cac gg <sup>g</sup> at <sup>t</sup> ctc aag gg <sup>c</sup> at <sup>g</sup> Arg Gly Lys Arg Gly Trp Lys Ser Phe His Gly Ile Leu Lys Gly Met 400                   405                   410	3048
atc ctc tac ctg cag aag gag gag tac aag cct ggg aag gcc ctt tca Ile Leu Tyr Leu Gln Lys Glu Tyr Lys Pro Gly Lys Ala Leu Ser 415                   420                   425                   430	3096
gag acg gag ctc aag aat gcc atc agc atc cac cat gcc ctg gcc act Glu Thr Glu Leu Lys Asn Ala Ile Ser Ile His His Ala Leu Ala Thr 435                   440                   445	3144
cgt gcc agt gac tac agc aag agg ccc cac gtc ttc tac ctg cgc aca Arg Ala Ser Asp Tyr Ser Lys Arg Pro His Val Phe Tyr Leu Arg Thr 450                   455                   460	3192
gct gac tgg cg <sup>g</sup> gg <sup>c</sup> gtc tt <sup>c</sup> ctc tt <sup>c</sup> cag gcc ccg agc ctg gag cag at <sup>g</sup> Ala Asp Trp Arg Val Phe Leu Phe Gln Ala Pro Ser Leu Glu Gln Met 465                   470                   475	3240
cag tcc tgg atc act cgc atc aat gta gta gcc gct at <sup>t</sup> ttc tct g <sup>c</sup> Gln Ser Trp Ile Thr Arg Ile Asn Val Val Ala Ala Met Phe Ser Ala 480                   485                   490	3288
ccc ccc ttc cca gct gct gtt agc tcc caa aag aag ttc agc cgc cct Pro Pro Phe Pro Ala Ala Val Ser Ser Gln Lys Lys Phe Ser Arg Pro 495                   500                   505                   510	3336

ctc ctg ccc agc gct gcc acc cgc ctc tcc cag qaq gag caq gtg cg	3384
Leu Leu Pro Ser Ala Ala Thr Arg Leu Ser Gln Glu Glu Gln Val Arg	
515 520 525	
acc cac gag gcc aag ctg aag gcc atg gca agt gag ctg cg	3432
Glu Ala Lys Leu Lys Ala Met Ala Ser Glu Leu Arg Glu His	
530 535 540	
cgg gcc gcc cag ctg ggc aag aag ggc cgg ggc aag aag gct gaa gag	3480
Arg Ala Ala Gln Leu Gly Lys Lys Gly Arg Gly Lys Ala Glu Glu	
545 550 555	
cag cgg cag aag gag gcc tac ctg gag ttt gag aaa tcc cgc tac agc	3528
Gln Arg Gln Lys Glu Ala Tyr Leu Glu Phe Glu Lys Ser Arg Tyr Ser	
560 565 570	
acc tat gca gcg ctg ctt cgg gtc aag ctg aag gca ggc agt gag gag	3576
Thr Tyr Ala Ala Leu Leu Arg Val Lys Leu Lys Ala Gly Ser Glu Glu	
575 580 585 590	
ctg gat gca gtg gag gca gca ctg gcc cag gcc ggg agc aca gag gat	3624
Leu Asp Ala Val Glu Ala Ala Leu Ala Gln Ala Gly Ser Thr Glu Asp	
595 600 605	
gga ctc cct cct cac tcc agt ccc tcc ctg cag ccc aaa ccc tcc	3672
Gly Leu Pro Pro Ser His Ser Ser Pro Ser Leu Gln Pro Lys Pro Ser	
610 615 620	
agc cag ccc cgg gct cag cgt cac agc tca gag cct cgg cca ggg gca	3720
Ser Gln Pro Arg Ala Gln Arg His Ser Ser Glu Pro Arg Pro Gly Ala	
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gggatccgc agcggtgtaa ggaactgaga cacctcactg ctggggcgcc ggaacagctg	480
ggctgagacg ggaactcgac agggaaagaga gagacgggcc agggacagcc acc atg Met 1	536
tcc ttc cca cac ttt gga cac ccg tac cgc ggc gct tcc cag ttt ctg Ser Phe Pro His Phe Gly His Pro Tyr Arg Gly Ala Ser Gln Phe Leu 5 10 15	584
gcg tcg gca agt tcc agc acc aca tgc tgc gaa tct acc caa cgc tct Ala Ser Ala Ser Ser Ser Thr Thr Cys Cys Glu Ser Thr Gln Arg Ser 20 25 30	632
gtc tca gat gtg gca tca ggc tcc acc cca gcg ccc gct ctc tgc tgc Val Ser Asp Val Ala Ser Gly Ser Thr Pro Ala Pro Ala Leu Cys Cys 35 40 45	680
gca ccc tac gat agt cga ctg ctg ggc agt gcg cga ccg gag ctg ggc Ala Pro Tyr Asp Ser Arg Leu Leu Gly Ser Ala Arg Pro Glu Leu Gly 50 55 60 65	728
gcc gcc ttg ggc atc tat gga gca ccc tat gcg gcc gct gca gct gcc Ala Ala Leu Gly Ile Tyr Gly Ala Pro Tyr Ala Ala Ala Ala Ala 70 75 80	776
cag agc tac cct ggc tac ctg ccc tat agc cca gag ccc ccc tca ctg Gln Ser Tyr Pro Gly Tyr Leu Pro Tyr Ser Pro Glu Pro Pro Ser Leu 85 90 95	824
tat ggg gca ctg aat cca cag tat gaa ttt aag gag gct gca ggg agt Tyr Gly Ala Leu Asn Pro Gln Tyr Glu Phe Lys Glu Ala Ala Gly Ser 100 105 110	872
ttt aca tcc agc ctg gca caa cca gga gcc tat tat ccc tat gag cgg Phe Thr Ser Ser Leu Ala Gln Pro Gly Ala Tyr Tyr Pro Tyr Glu Arg 115 120 125	920
act ctg ggg cag tac caa tat gaa cgg tat ggc gca gtg gaa ttg agt Thr Leu Gly Gln Tyr Gln Tyr Glu Arg Tyr Gly Ala Val Glu Leu Ser 130 135 140 145	968
ggc gcc ggt cgc cga aag aac gcg acc cgg gag acc acc agt aca ctc Gly Ala Gly Arg Arg Lys Asn Ala Thr Arg Glu Thr Thr Ser Thr Leu 150 155 160	1016
aag gcc tgg ctc aac gag cac cgc aaa aac ccc tac ccc act aag ggt Lys Ala Trp Leu Asn Glu His Arg Lys Asn Pro Tyr Pro Thr Lys Gly 165 170 175	1064
gag aag atc atg ctg gcc atc atc acc aag atg acc ctc acc cag gtg Glu Lys Ile Met Leu Ala Ile Ile Thr Lys Met Thr Leu Thr Gln Val 180 185 190	1112
tcc acc tgg ttc gcc aac gca cgc cgg cgc ctc aag aaa gag aac aaa Ser Thr Trp Phe Ala Asn Ala Arg Arg Arg Leu Lys Lys Glu Asn Lys 195 200 205	1160
atg aca tgg gcg ccc aag aac aaa ggt ggg gag gag agg aag gca gag Met Thr Trp Ala Pro Lys Asn Lys Gly Gly Glu Glu Arg Lys Ala Glu 210 215 220 225	1208
gga gga gag gag gac tca cta ggc tgc cta act gct gac acc aaa gaa	1256

Gly Gly Glu Glu Asp Ser Leu Gly Cys Leu Thr Ala Asp Thr Lys Glu		
230	235	240
gtt act gct agc cag gag gcc cg <sup>g</sup> ggg ctc cgg ctg agt gac ctg gaa		1304
Val Thr Ala Ser Gln Glu Ala Arg Gly Leu Arg Leu Ser Asp Leu Glu		
245	250	255
gac ctg gag gaa gag gag gag gag gag gaa gct gaa gac gag gag		1352
Asp Leu Glu Glu Glu Glu Glu Glu Ala Glu Asp Glu Glu		
260	265	270
gta gtg gcc aca gct ggg gac agg ctg acg gag ttc cga aag ggc gcg		1400
Val Val Ala Thr Ala Gly Asp Arg Leu Thr Glu Phe Arg Lys Gly Ala		
275	280	285
cag tca ctg cct ggg cc <sup>g</sup> tgc gct gca gct cga gag ggc cga ttg gag		1448
Gln Ser Leu Pro Gly Pro Cys Ala Ala Arg Glu Gly Arg Leu Glu		
290	295	300
305		
cgc agg gag tgc ggc ctg gct gc <sup>g</sup> ccc cgc ttc tcc ttc aat gac cct		1496
Arg Arg Glu Cys Gly Leu Ala Ala Pro Arg Phe Ser Phe Asn Asp Pro		
310	315	320
tcc gga tcg gaa gaa gct gac ttc ctc tcg gc <sup>g</sup> gag aca ggc agc cct		1544
Ser Gly Ser Glu Glu Ala Asp Phe Leu Ser Ala Glu Thr Gly Ser Pro		
325	330	335
agg ttg acc atg cac tac cca tgc ttg gag aaa cc <sup>g</sup> cgc atc tgg tct		1592
Arg Leu Thr Met His Tyr Pro Cys Leu Glu Lys Pro Arg Ile Trp Ser		
340	345	350
ctg gc <sup>g</sup> cac acc gc <sup>g</sup> aca gc <sup>g</sup> gct gtt gaa ggt gca ccc cca gc <sup>g</sup>		1640
Leu Ala His Thr Ala Thr Ala Ser Ala Val Glu Gly Ala Pro Pro Ala		
355	360	365
cgg cct agg cca cga agt cct gag tgc cgt atg att cct gga cag cct		1688
Arg Pro Arg Pro Arg Ser Pro Glu Cys Arg Met Ile Pro Gly Gln Pro		
370	375	380
385		
cct gcc tct gcc cg <sup>g</sup> cga ctc tca gtc ccc aga gac tcc gc <sup>g</sup> tgc gag		1736
Pro Ala Ser Ala Arg Arg Leu Ser Val Pro Arg Asp Ser Ala Cys Asp		
390	395	400
gag tct tcc tgc ata ccc aaa gc <sup>g</sup> ttt gga aac ccc aag ttt gc <sup>g</sup> ctg		1784
Glu Ser Ser Cys Ile Pro Lys Ala Phe Gly Asn Pro Lys Phe Ala Leu		
405	410	415
cag gga cta cc <sup>g</sup> ctg aac tgt gc <sup>g</sup> cc <sup>g</sup> tgc cc <sup>g</sup> cgg agg agc gag cct		1832
Gln Gly Leu Pro Leu Asn Cys Ala Pro Cys Pro Arg Arg Ser Glu Pro		
420	425	430
gta gtg cag tgc cag tac cc <sup>g</sup> tct gga gca gaa ggt agt ggg ccc cca		1880
Val Val Gln Cys Gln Tyr Pro Ser Gly Ala Glu Gly Ser Gly Pro Pro		
435	440	445
gc <sup>g</sup> gc <sup>g</sup> ctg gga gta tct atg caa aag aca ccc acc tac cgc ccc gc <sup>g</sup>		1928
Ala Ala Leu Gly Val Ser Met Gln Lys Thr Pro Thr Tyr Arg Pro Ala		
450	455	460
465		
cgg caa ttg cac acc ctc tgc cat tcc agt ctg ccc aga gga gac tcg		1976
Arg Gln Leu His Thr Leu Cys His Ser Ser Leu Pro Arg Gly Asp Ser		
470	475	480
ctg gtc cct gct gtg ctc aga gag ttt act agg gtt ggg cag gca		2024

Leu Val Pro Ala Val Leu Leu Arg Glu Phe Thr Arg Val Gly Gln Ala			
485	490	495	
cca ggg ctt tta gag aag tct aag act gtg ggc cag acg cac acc aca			2072
Pro Gly Leu Leu Glu Lys Ser Lys Thr Val Gly Gln Thr His Thr Thr			
500	505	510	
gat tta agg gga ccc tcc agt cgc cct cgc tga cccgcggc ttagggtccg			2123
Asp Leu Arg Gly Pro Ser Ser Arg Pro Arg *			
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gagacgtggt gggccgtcct tcctgtgaca cgacccttga gtgacagttc tatttgattt	420	
cctccggta c tgtgaggaaa ggacacgact ct atg gtg agg act gat gga cat	473	
Met Val Arg Thr Asp Gly His		
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aca tta tct gag aaa aga aac tac cag gtg aca aac agc atg ttt ggt			
Thr Leu Ser Glu Lys Arg Asn Tyr Gln Val Thr Asn Ser Met Phe Gly			
10	15	20	

gct tca aga aag aag ttt gta gag ggg gtc gac agt gac tac cat gac			
Ala Ser Arg Lys Lys Phe Val Glu Gly Val Asp Ser Asp Tyr His Asp			
25	30	35	

gaa aac atg tac tac agc cag tct tct atg ttt cca cat cgg tca gaa			
Glu Asn Met Tyr Tyr Ser Gln Ser Ser Met Phe Pro His Arg Ser Glu			
40	45	50	55

aaa gat atg ctg gca tca cca tct aca tca ggt cag ctg tct cag ttt			
Lys Asp Met Leu Ala Ser Pro Ser Thr Ser Gly Gln Leu Ser Gln Phe			
60	65	70	

ggg gca agt tta tac ggg caa caa agt gca cta ggc ctt cca atg agg			
Gly Ala Ser Leu Tyr Gly Gln Gln Ser Ala Leu Gly Leu Pro Met Arg			
75	80	85	

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 Gly Met Ser Asn Asn Thr Pro Gln Leu Asn Arg Ser Leu Ser Gln Gly  
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 Thr Gln Leu Pro Ser His Val Thr Pro Thr Thr Gly Val Pro Thr Met  
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 tca ctt cac acg cct cca tct cca agc agg ggt att ttg cct atg aat 857  
 Ser Leu His Thr Pro Pro Ser Pro Arg Gly Ile Leu Pro Met Asn  
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 cct agg aat atg atg aac cac tcc cag gtt ggt cag ggc att gga att 905  
 Pro Arg Asn Met Met Asn His Ser Gln Val Gly Gln Gly Ile Gly Ile  
   140               145               150  
  
 cct agc agg aca aat agc atg agc agt tca ggg tta ggt agc ccc aac 953  
 Pro Ser Arg Thr Asn Ser Met Ser Ser Gly Leu Gly Ser Pro Asn  
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 aga agc tcg cca agc ata ata tgt atg cca aag cag cag cct tct cga 1001  
 Arg Ser Ser Pro Ser Ile Ile Cys Met Pro Lys Gln Gln Pro Ser Arg  
   170               175               180  
  
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 Gln Pro Phe Thr Val Asn Ser Met Ser Gly Phe Gly Met Asn Arg Asn  
   185               190               195  
  
 cag gca ttt gga atg aat aac tcc tta tca agt aac att ttt aat gga 1097  
 Gln Ala Phe Gly Met Asn Asn Ser Leu Ser Ser Asn Ile Phe Asn Gly  
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 Thr Asp Gly Ser Glu Asn Val Thr Gly Leu Asp Leu Ser Asp Phe Pro  
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 gca tta gca gac cga aac agg agg gaa gga agt ggt aac cca act cca 1193  
 Ala Leu Ala Asp Arg Asn Arg Arg Glu Gly Ser Gly Asn Pro Thr Pro  
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 Leu Ile Asn Pro Leu Ala Gly Arg Ala Pro Tyr Val Gly Met Val Thr  
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 Lys Pro Ala Asn Glu Gln Ser Gln Asp Phe Ser Ile His Asn Glu Asp  
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 Phe Pro Ala Leu Pro Gly Ser Ser Tyr Lys Asp Pro Thr Ser Ser Asn  
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 Asp Asp Ser Lys Ser Asn Leu Asn Thr Ser Gly Lys Thr Thr Ser Ser  
   300               305               310  
  
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 Thr Asp Gly Pro Lys Phe Pro Gly Asp Lys Ser Ser Thr Thr Gln Asn  
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cct gaa aat ctc tac ccc aaa ttt gcg tca ccc tgg gca tct tca cct Pro Glu Asn Leu Tyr Pro Lys Phe Ala Ser Pro Trp Ala Ser Ser Pro 395 400 405	1673
tgt cga cct caa gac ata gac ttc cat gtt cca tct gag tac tta acg Cys Arg Pro Gln Asp Ile Asp Phe His Val Pro Ser Glu Tyr Leu Thr 410 415 420	1721
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cag tac agc acc cag gct ccg acc ctt ccc ctg ccc act gtg ggg gcc Gln Tyr Ser Thr Gln Ala Pro Thr Leu Pro Leu Pro Thr Val Gly Ala 20 25 30	157
agc tat act gga caa ccc act cct ggg atg gac cct gcc gtg aac ccg Ser Tyr Thr Gly Gln Pro Thr Pro Gly Met Asp Pro Ala Val Asn Pro 35 40 45	205
gcc ttt ccc cca gct gcc ccg gca ggg tac ggt gga tac cag ccc cac	253

Ala Phe Pro Pro Ala Ala Pro Ala Gly Tyr Gly Gly Tyr Gln Pro His			
50	55	60	
tcc ggc cag gac ttc gcc tac ggc agc cga ccc cag gag ccc gtc ccc Ser Gly Gln Asp Phe Ala Tyr Gly Ser Arg Pro Gln Glu Pro Val Pro		301	
65	70	75	
acg gcc acc acc atg gct acc tac cag gac agt tac agc tac gga cag Thr Ala Thr Thr Met Ala Thr Tyr Gln Asp Ser Tyr Ser Tyr Gly Gln		349	
80	85	90	95
tca gca gct gcc agg agc tat gag gac agg ccg tac ttc cag tct gct Ser Ala Ala Ala Arg Ser Tyr Glu Asp Arg Pro Tyr Phe Gln Ser Ala		397	
100	105	110	
gcc ctc cag tct ggg cgc atg aca gcc gca gac tcc ggc cag cca ggg Ala Leu Gln Ser Gly Arg Met Thr Ala Ala Asp Ser Gly Gln Pro Gly		445	
115	120	125	
acc caa gaa gcc tgc ggg cag ccc agc ccc cat ggc agt cac agc cac Thr Gln Glu Ala Cys Gly Gln Pro Ser Pro His Gly Ser His Ser His		493	
130	135	140	
gct cag ccc cca cag cag gcg ccc ata gtg gag tcc gga cag cca gcg Ala Gln Pro Pro Gln Gln Ala Pro Ile Val Glu Ser Gly Gln Pro Ala		541	
145	150	155	
agc acc ttg tcc tcg gga tac acc tac ccc acg gcg aca ggc gtc cag Ser Thr Leu Ser Ser Gly Tyr Thr Tyr Pro Thr Ala Thr Gly Val Gln		589	
160	165	170	175
ccc gag tcg tca gct tcc atc gtg acc tcc tac ccc ccg ccc tcc tac Pro Glu Ser Ser Ala Ser Ile Val Thr Ser Tyr Pro Pro Pro Ser Tyr		637	
180	185	190	
aac ccc acc tgc acc gcc tac acg gca cca agc tac ccg aac tat gac Asn Pro Thr Cys Thr Ala Tyr Thr Ala Pro Ser Tyr Pro Asn Tyr Asp		685	
195	200	205	
gcg tcg gtg tac tcc gct gcc agc cct ttc tat cct cca gcg cag ccc Ala Ser Val Tyr Ser Ala Ala Ser Pro Phe Tyr Pro Pro Ala Gln Pro		733	
210	215	220	
ccg cct ccc ccg gga ccc ccg cag ctg ccc ccg ccg ccc gcg cct Pro Pro Pro Pro Gly Pro Pro Gln Gln Leu Pro Pro Pro Pro Ala Pro		781	
225	230	235	
gca ggc tca gga agc agc ccc agg gcc gac tcg aag cca ccg ctt ccc Ala Gly Ser Gly Ser Ser Pro Arg Ala Asp Ser Lys Pro Pro Leu Pro		829	
240	245	250	255
agc aag ctg ccg aga ccc aag gcg ggg ccc agg cag ctc cag ctt cac Ser Lys Leu Pro Arg Pro Lys Ala Gly Pro Arg Gln Leu Gln Leu His		877	
260	265	270	
tac tgc gac atc tgc aag atc agc tgc gct ggc ccc cag acc tac cgg Tyr Cys Asp Ile Cys Lys Ile Ser Cys Ala Gly Pro Gln Thr Tyr Arg		925	
275	280	285	
gaa cat ctg gga ggg cag aag cac aga aag aag gag ggc gcc cag aag Glu His Leu Gly Gly Gln Lys His Arg Lys Lys Glu Ala Ala Gln Lys		973	
290	295	300	
aca ggc gtg cag ccc aac ggg agc ccg cgc ggg gtg cag gcg cag ctg		1021	

Thr Gly Val Gln Pro Asn Gly Ser Pro Arg Gly Val Gln Ala Gln Leu  
 305 310 315

cat tgc gac ctg tgc gcc gtg tcc tgc acc ggg gcg gac gcc tac gcg 1069  
 His Cys Asp Leu Cys Ala Val Ser Cys Thr Gly Ala Asp Ala Tyr Ala  
 320 325 330 335

gcc cac atc cgg gga tcc aag cac cag aag gtc ttc aag ctg cac gcc 1117  
 Ala His Ile Arg Gly Ser Lys His Gln Lys Val Phe Lys Leu His Ala  
 340 345 350

aaa ctg ggg aag ccc att ccc acc ctc gag cct gca ctg gcc aca gag 1165  
 Lys Leu Gly Lys Pro Ile Pro Thr Leu Glu Pro Ala Leu Ala Thr Glu  
 355 360 365

agc ccc ccc ggg gca gag gcc aag ccc acg tcc ccc act ggc ccc agc 1213  
 Ser Pro Pro Gly Ala Glu Ala Lys Pro Thr Ser Pro Thr Gly Pro Ser  
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gtg tgt gcc tcg agc agg cca gcg ctg gcc aag aga ccc gtg gcc tcg 1261  
 Val Cys Ala Ser Ser Arg Pro Ala Leu Ala Lys Arg Pro Val Ala Ser  
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aag gcc tta tgc gag ggg cct cct gag cca cag gca gca ggc tgc aga 1309  
 Lys Ala Leu Cys Glu Gly Pro Pro Glu Pro Gln Ala Ala Gly Cys Arg  
 400 405 410 415

ccc cag tgg ggg aaa cca gcc caa cct aaa tta gag ggt ccc gga gca 1357  
 Pro Gln Trp Gly Lys Pro Ala Gln Pro Lys Leu Glu Gly Pro Gly Ala  
 420 425 430

cct acc caa gga ggc tca aag gaa gct ccc gcg ggc tgc tct gat gcg 1405  
 Pro Thr Gln Gly Gly Ser Lys Glu Ala Pro Ala Gly Cys Ser Asp Ala  
 435 440 445

cag ccg gtg ggc ccg gaa tat gtg gag gag gtg ttc agc gac gaa ggg 1453  
 Gln Pro Val Gly Pro Glu Tyr Val Glu Glu Val Phe Ser Asp Glu Gly  
 450 455 460

cga gtg ctt cgc ttc cac tgc aag ctg tgc gag tgc agt ttc aac gac 1501  
 Arg Val Leu Arg Phe His Cys Lys Leu Cys Glu Cys Ser Phe Asn Asp  
 465 470 475

ctt aac gcg aag gac ctg cac gtg agg ggg cgg cgg cac cgg ctg cag 1549  
 Leu Asn Ala Lys Asp Leu His Val Arg Gly Arg Arg His Arg Leu Gln  
 480 485 490 495

tac cgg aag aaa gtg aac ccg gac ctt ccc att gcc acg gag ccc agc 1597  
 Tyr Arg Lys Lys Val Asn Pro Asp Leu Pro Ile Ala Thr Glu Pro Ser  
 500 505 510

agc cgg gct ccg aag gtc ctg gag gag cgc atg agg aag cag cgg cac 1645  
 Ser Arg Ala Arg Lys Val Leu Glu Glu Arg Met Arg Lys Gln Arg His  
 515 520 525

ctg gcg gag gag cgg ctg gag cag ctg cgg cgc tgg cac gcg gag agg 1693  
 Leu Ala Glu Glu Arg Leu Glu Gln Leu Arg Arg Trp His Ala Glu Arg  
 530 535 540

agg cgg ctg gag gag cca ccc cag gac gtg ccg ccc cac gcg ccg 1741  
 Arg Arg Leu Glu Glu Pro Pro Gln Asp Val Pro Pro His Ala Pro  
 545 550 555

ccc gac tgg gcc cag cct ctc atg ggc agg ccc gag tca ccc gcc 1789

Pro Asp Trp Ala Gln Pro Leu Leu Met Gly Arg Pro Glu Ser Pro Ala			
560	565	570	575
agc gcc cca ctc cag ccc ggg cg <sup>g</sup> ccg gc <sup>g</sup> tcc agc gac gac cg <sup>g</sup>			1837
Ser Ala Pro Leu Gln Pro Gly Arg Arg Pro Ala Ser Ser Asp Asp Arg			
580	585	590	
cac gtc atg tgc aag cac gcc acc atc tac ccc acg gag cag gag ctc			1885
His Val Met Cys Lys His Ala Thr Ile Tyr Pro Thr Glu Gln Glu Leu			
595	600	605	
ctg gcc gtg cag agg gcc gtg tcc cac gca gag cg <sup>g</sup> gcc ctc aag ctg			1933
Leu Ala Val Gln Arg Ala Val Ser His Ala Glu Arg Ala Leu Lys Leu			
610	615	620	
gtg tcc gac aca ctg gcc gag gag gac cg <sup>g</sup> ggc cg <sup>c</sup> cg <sup>a</sup> gag gaa gag			1981
Val Ser Asp Thr Leu Ala Glu Glu Asp Arg Gly Arg Arg Glu Glu Glu			
625	630	635	
ggt gac aag cg <sup>c</sup> agc agc gtt gcc ccc cag act cg <sup>g</sup> gtc ctg aaa ggc			2029
Gly Asp Lys Arg Ser Ser Val Ala Pro Gln Thr Arg Val Leu Lys Gly			
640	645	650	655
gtc atg cga gta ggc atc ctg gc <sup>g</sup> aaa ggc ctc ctc ctg cgt ggg gac			2077
Val Met Arg Val Gly Ile Leu Ala Lys Gly Leu Leu Leu Arg Gly Asp			
660	665	670	
agg aac gtg cgc ctc gct ctg ctc tgc tcc gag aag ccc acg cac agc			2125
Arg Asn Val Arg Leu Ala Leu Leu Cys Ser Glu Lys Pro Thr His Ser			
675	680	685	
ctg ctg cgg agg atc gcc cag cag ctg ccc cg <sup>g</sup> cag ctc cag atg gtg			2173
Leu Leu Arg Arg Ile Ala Gln Gln Leu Pro Arg Gln Leu Gln Met Val			
690	695	700	
acc gag gat gag tat gag gtc tcc tcc gac cct gaa gcc aac att gtc			2221
Thr Glu Asp Glu Tyr Glu Val Ser Ser Asp Pro Glu Ala Asn Ile Val			
705	710	715	
atc tcc tcc tgt gag gag ccc agg atg cag gtc acc ata tct gtc acc			2269
Ile Ser Ser Cys Glu Glu Pro Arg Met Gln Val Thr Ile Ser Val Thr			
720	725	730	735
tca cct ctg atg cgg gag gac ccc tcc aca gac cca ggt gtg gag gag			2317
Ser Pro Leu Met Arg Glu Asp Pro Ser Thr Asp Pro Gly Val Glu Glu			
740	745	750	
cct cag gct gat gca ggt gat gtc ctg agc ccc aag aag tgc ctc gag			2365
Pro Gln Ala Asp Ala Gly Asp Val Leu Ser Pro Lys Lys Cys Leu Glu			
755	760	765	
tcc ctg gcc gcc ctc cgt cat <sup>g</sup> cc agg tgg ttt cag gct cga gcc agc			2413
Ser Leu Ala Ala Leu Arg His Ala Arg Trp Phe Gln Ala Arg Ala Ser			
770	775	780	
ggc ctg cag cca tgc gtg atc gtc atc agg gtc ctg agg gac ctc tgc			2461
Gly Leu Gln Pro Cys Val Ile Val Ile Arg Val Leu Arg Asp Leu Cys			
785	790	795	
cgg cgt gtg ccc acc tgg ggg gcc ctg cca gcc tgg gcc atg gag ctg			2509
Arg Arg Val Pro Thr Trp Gly Ala Leu Pro Ala Trp Ala Met Glu Leu			
800	805	810	815
ctg gtg gag aag gct gtg agc agt gcg gct ggg ccc ctg ggc ccc ggg			2557

Leu Val Glu Lys Ala Val Ser Ser Ala Ala Gly Pro Leu Gly Pro Gly			
820	825	830	
gat gca gtc agg cga gtc ctg gag tgc gtg gcc aca ggg acg ctc ctg			2605
Asp Ala Val Arg Arg Val Leu Glu Cys Val Ala Thr Gly Thr Leu Leu			
835	840	845	
aca gac ggg ccc ggg ctc cag gat ccc tgc gag aga gac cag aca gat			2653
Thr Asp Gly Pro Gly Leu Gln Asp Pro Cys Glu Arg Asp Gln Thr Asp			
850	855	860	
gcc ctc gag ccc atg acc ctc caa gag cg <sup>g</sup> gaa gac gtg acc gcc agc			2701
Ala Leu Glu Pro Met Thr Leu Gln Glu Arg Glu Asp Val Thr Ala Ser			
865	870	875	
gcc cag cac gcc ctg cga atg ctg gcc ttc cgg cag acc cac aag gtc			2749
Ala Gln His Ala Leu Arg Met Leu Ala Phe Arg Gln Thr His Lys Val			
880	885	890	895
ctg ggc atg gat ctc ctg ccg ccc aga cac cgg ctg ggg gcc cgc ttc			2797
Leu Gly Met Asp Leu Leu Pro Pro Arg His Arg Leu Gly Ala Arg Phe			
900	905	910	
cgg aag agg caa cgg gga cct ggc gag gga gag gag ggc gca ggg gag			2845
Arg Lys Arg Gln Arg Gly Pro Gly Glu Gly Glu Gly Ala Gly Glu			
915	920	925	
aag aag cgg ggc cgg ggc gga gag ggg ctc gtg tga gcccctacc			2894
Lys Lys Arg Gly Arg Gly Gly Glu Gly Leu Val *			
930	935	940	
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cgccgcgtcccc gagc atg gca ggc tcc ctg cct ccc tgc gtg gtg gac tgt	170
Met Ala Gly Ser Leu Pro Pro Cys Val Val Asp Cys	
1 5 10	
ggc acc ggg tat acc aag ctt ggc tac gca ggc aac act gag ccc cag	218
Gly Thr Gly Tyr Thr Lys Leu Gly Tyr Ala Gly Asn Thr Glu Pro Gln	
15 20 25	
ttc att att cct tca tgt att gcc atc aga gag tca gca aag gta gtt	266
Phe Ile Ile Pro Ser Cys Ile Ala Ile Arg Glu Ser Ala Lys Val Val	
30 35 40	
gac caa gct caa agg aga gtg ttg agg gga gtt gat gac ctt gac ttt	314
Asp Gln Ala Gln Arg Arg Val Leu Arg Gly Val Asp Asp Leu Asp Phe	
45 50 55 60	

ttc ata gga gat gaa gcc atc gat aaa cct aca tat gct aca aag tgg Phe Ile Gly Asp Glu Ala Ile Asp Lys Pro Thr Tyr Ala Thr Lys Trp 65 70 75	362
ccg ata cga cat gga atc att gaa gac tgg gat ctt atg gaa agg ttc Pro Ile Arg His Gly Ile Ile Asp Trp Asp Leu Met Glu Arg Phe 80 85 90	410
atg gag caa gtg gtt ttt aaa tat ctt cga gct gaa cct gag gac cat Met Glu Gln Val Val Phe Lys Tyr Leu Arg Ala Glu Pro Glu Asp His 95 100 105	458
tat ttt tta atg aca gaa cct cca ctc aat aca cca gaa aac aga gag Tyr Phe Leu Met Thr Glu Pro Pro Leu Asn Thr Pro Glu Asn Arg Glu 110 115 120	506
tat ctt gca gaa att atg ttt gaa tca ttt aac gta cca gga ctc tac Tyr Leu Ala Glu Ile Met Phe Glu Ser Phe Asn Val Pro Gly Leu Tyr 125 130 135 140	554
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caa gtg ggt gaa cgt acg tta acg ggg ata gtc att gac agc gga gat Gln Val Gly Glu Arg Thr Leu Thr Gly Ile Val Ile Asp Ser Gly Asp 160 165 170	650
gga gtc acc cat gtt atc cca gtg gca gaa ggt tat gta att gga agc Gly Val Thr His Val Ile Pro Val Ala Glu Gly Tyr Val Ile Gly Ser 175 180 185	698
tgc atc aaa cac atc ccg att gca ggt aga gat att acg tat ttc att Cys Ile Lys His Ile Pro Ile Ala Gly Arg Asp Ile Thr Tyr Phe Ile 190 195 200	746
caa cag ctg cta agg gag agg gag gtg gga atc cct cct gag cag tca Gln Gln Leu Leu Arg Glu Arg Glu Val Gly Ile Pro Pro Glu Gln Ser 205 210 215 220	794
ctg gag acc gca aaa gcc att aag gag aaa tac tgt tac att tgc ccc Leu Glu Thr Ala Lys Ala Ile Lys Glu Lys Tyr Cys Tyr Ile Cys Pro 225 230 235	842
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gat gaa gta ata cag aac tgc ccc atc gat gtg cgg cgc ccg ctg tat Asp Glu Val Ile Gln Asn Cys Pro Ile Asp Val Arg Arg Pro Leu Tyr 305 310 315	1082

aag aat gtc gta ctc tca gga ggc tcc acc atg ttc agg gat ttc gga Lys Asn Val Val Leu Ser Gly Gly Ser Thr Met Phe Arg Asp Phe Gly	1130
320 325 330	
cgc cga ctg cag agg gat ttg aag aga gtg gtg gat gct agg ctg agg Arg Arg Leu Gln Arg Asp Leu Lys Arg Val Val Asp Ala Arg Leu Arg	1178
335 340 345	
ctc agc gag gag ctc agc ggc ggg agg atc aag ccg aag cct gtg gag Leu Ser Glu Glu Leu Ser Gly Gly Arg Ile Lys Pro Lys Pro Val Glu	1226
350 355 360	
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365 370 375 380	
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385 390 395	
aag aag gac tat gaa gag tac ggg ccc agc atc tgc cgc cac aac ccc Lys Lys Asp Tyr Glu Glu Tyr Gly Pro Ser Ile Cys Arg His Asn Pro	1370
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415	
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atccaatccc acaatgtcc ggccccctt aagggccctt gttatagtgt gcatgcctg	180
atgggagatg tagtccgcct cggtcagact cgccttatta ctgctttac gactgggttt	240
ttttttttt aacctccaga aacgaaagcc tcagcctatc agcgatgcct aagtcccagt	300

cacgataacc aaacggcgtc gccctttac accttcccg agcggcagtc atcccaaata	360
caaactac atg ttc cag gat gct ttg ggc ggc aga tct cgc gga agc cgc Met Phe Gln Asp Ala Leu Gly Gly Arg Ser Arg Gly Ser Arg	410
1 5 10	
gag gag agc ccg gcc ccg tct cgc gcg cct gct tcc gcc tcc ctg tgg Glu Glu Ser Pro Ala Pro Ser Arg Ala Pro Ala Ser Ala Ser Leu Trp	458
15 20 25 30	
cgg cggtt gtt gtg gag gcc aaa atg gcg gct cag gcg gcg gca Arg Arg Leu Val Val Glu Ala Lys Met Ala Ala Gln Ala Ala Ala	506
35 40 45	
gcg gcc cag gcg gcg gcc cag gct gcg cag gcc gag gcg gcc gac Ala Ala Gln Ala Ala Ala Gln Ala Ala Gln Ala Glu Ala Ala Asp	554
50 55 60	
tcg tgg tac ctg gcg ctt ctg ggc ttc gct gag cac ttc cgc act tcc Ser Trp Tyr Leu Ala Leu Leu Gly Phe Ala Glu His Phe Arg Thr Ser	602
65 70 75	
agc ccg ccc aaa atc cgc ctg tgc gtg cac tgc ctg cag gcc gtg ttc Ser Pro Pro Lys Ile Arg Leu Cys Val His Cys Leu Gln Ala Val Phe	650
80 85 90	
ccc ttc aag ccg ccg cag cgc atc gag gcc cgt aca cac ctg cag ctg Pro Phe Lys Pro Pro Gln Arg Ile Glu Ala Arg Thr His Leu Gln Leu	698
95 100 105 110	
ggc tcc gtt ctc tat cac cac acc aag aac agc gag cag gcg cgc agc Gly Ser Val Leu Tyr His His Thr Lys Asn Ser Glu Gln Ala Arg Ser	746
115 120 125	
cac ctg gag aag gcg tgg ttg ata tca cag caa atc cca cag ttc gaa His Leu Glu Lys Ala Trp Leu Ile Ser Gln Gln Ile Pro Gln Phe Glu	794
130 135 140	
gat gtt aaa ttt gaa gca gca agt ctg ttg tct gaa ttg tac tgt caa Asp Val Lys Phe Glu Ala Ala Ser Leu Leu Ser Glu Leu Tyr Cys Gln	842
145 150 155	
gag aat tcc gtt gat gca gca aag ccg ctg ctg cgg aag gcg atc cag Glu Asn Ser Val Asp Ala Ala Lys Pro Leu Leu Arg Lys Ala Ile Gln	890
160 165 170	
atc tca cag cag acc cca tat tgg cac tgc cgc ctg ctc ttc cag ctc Ile Ser Gln Gln Thr Pro Tyr Trp His Cys Arg Leu Leu Phe Gln Leu	938
175 180 185 190	
gct caa ctg cac acg ctt gag aag gac ctg gtg tct gcc tgt gac ctc Ala Gln Leu His Thr Leu Glu Lys Asp Leu Val Ser Ala Cys Asp Leu	986
195 200 205	
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210 215 220	
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Lys Leu Gln Glu Val His Pro Leu Leu Thr Leu Cys Gly Gln Ile Val				
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Glu Asn Trp Gln Gly Asn Pro Ile Gln Lys Glu Ser Leu Arg Val Phe				
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Phe Leu Val Leu Gln Val Thr His Tyr Leu Asp Ala Gly Gln Val Lys				
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agc gtg aag ccg tgt ctg aag cag ctg cag tgc atc cag acc atc				1274
Ser Val Lys Pro Cys Leu Lys Gln Leu Gln Cys Ile Gln Thr Ile				
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tcc aca ctg cac gat gat gag atc ctg ccc agc aac ccc gct gac ctc				1322
Ser Thr Leu His Asp Asp Glu Ile Leu Pro Ser Asn Pro Ala Asp Leu				
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Phe His Trp Leu Pro Lys Glu His Met Cys Val Leu Val Tyr Leu Val				
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Thr Val Met His Ser Met Gln Ala Gly Tyr Leu Glu Lys Ala Gln Lys				
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Tyr Thr Asp Lys Ala Leu Met Gln Leu Glu Lys Leu Lys Met Leu Asp				
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Cys Ser Pro Ile Leu Ser Ser Phe Gln Val Ile Leu Leu Glu His Ile				
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Leu Leu Glu Arg Ile Asn Pro Asp His Ser Phe Pro Val Ser Ser His				
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ccc ctc ctg cgc aca gg <sup>g</sup> ctg gat cct gca gg <sup>g</sup> agc tgt agc cgt Pro Leu Leu Arg Thr Gly Arg Leu Asp Pro Ala Gly Ser Cys Ser Arg 685 690 695	3736
tcc ctg gcc agc gg <sup>g</sup> gca gtg cag cgc agc ctg gcc atc atc cg <sup>g</sup> cag Ser Leu Ala Ser Arg Ala Val Gln Arg Ser Leu Ala Ile Ile Arg Gln 700 705 710	3784
g <sup>g</sup> cg <sup>g</sup> cag cgc agg gag aag agg aag gag tac tgc atg tac tac aac Ala Arg Gln Arg Arg Glu Lys Arg Lys Glu Tyr Cys Met Tyr Tyr Asn 715 720 725	3832
cgc ttc ggc agg tgc aac cgt gg <sup>g</sup> gag cgc tgc ccc tac atc cac gat Arg Phe Gly Arg Cys Asn Arg Gly Glu Arg Cys Pro Tyr Ile His Asp 730 735 740	3880

ccc gag aag gtg gcc gtg tgc acc agg ttt gtc egg ggc acc tgc aag 3928  
 Pro Glu Lys Val Ala Val Cys Thr Arg Phe Val Arg Gly Thr Cys Lys  
 745 750 755 760  
 aaa acg gat ggg acc tgc ccc ttc tcc cac cat gtg tcc aag gag aag 3976  
 Lys Thr Asp Gly Thr Cys Pro Phe Ser His His Val Ser Lys Glu Lys  
 765 770 775  
 atg ccg gtg tgc tcc tac ttc ctg aag ggc atc tgc agc aac agc aac 4024  
 Met Pro Val Cys Ser Tyr Phe Leu Lys Gly Ile Cys Ser Asn Ser Asn  
 780 785 790  
 tgt ccc tat agc cac gtg tac gtg tcc cgc aag gcc gag gtc tgc agc 4072  
 Cys Pro Tyr Ser His Val Tyr Val Ser Arg Lys Ala Glu Val Cys Ser  
 795 800 805  
 gac ttc ctc aaa ggc tac tgc ccc ctg ggt gca aag tgc aag aag aaa 4120  
 Asp Phe Leu Lys Gly Tyr Cys Pro Leu Gly Ala Lys Cys Lys Lys Lys  
 810 815 820  
 cac acg ctg ctg tgc ccc gac ttt gcc cgc agg ggg gcg tgt ccc cgc 4168  
 His Thr Leu Leu Cys Pro Asp Phe Ala Arg Arg Gly Ala Cys Pro Arg  
 825 830 835 840  
 ggc gcc cag tgc cag ctg ctc cac cgt acc cag aaa cgc cac agt cgg 4216  
 Gly Ala Gln Cys Gln Leu Leu His Arg Thr Gln Lys Arg His Ser Arg  
 845 850 855  
 cgg gca gcc acg tcc ccc gcc cca ggg ccc agc gac gca acc gcc agg 4264  
 Arg Ala Ala Thr Ser Pro Ala Pro Gly Pro Ser Asp Ala Thr Ala Arg  
 860 865 870  
 agc agg gtc tcg gcc agc cac ggg ccc agg aag cct tca gca tcc cag 4312  
 Ser Arg Val Ser Ala Ser His Gly Pro Arg Lys Pro Ser Ala Ser Gln  
 875 880 885  
 cgc ccc acc agg cag acg ccc agc tcg gct gcc ctc act gcg gct gcc 4360  
 Arg Pro Thr Arg Gln Thr Pro Ser Ser Ala Ala Leu Thr Ala Ala Ala  
 890 895 900  
 gtg gct gca cct ccc cac tgc cca ggg ggg tca gcc tct ccc tca tcc 4408  
 Val Ala Ala Pro Pro His Cys Pro Gly Gly Ser Ala Ser Pro Ser Ser  
 905 910 915 920  
 tcg aag gct tcc tcc tcc tcc tcc tca tcc cct ccc gct tcc 4456  
 Ser Lys Ala Ser Ser Ser Ser Ser Ser Pro Pro Ala Ser  
 925 930 935  
 ttg gac cac gag gca cca tct ctc cag gag gct gcc tta gca gca gcg 4504  
 Leu Asp His Glu Ala Pro Ser Leu Gln Glu Ala Ala Leu Ala Ala Ala  
 940 945 950  
 tgc tcc aac agg ctc tgc aag ctg cct tcc ttc atc tcc ctg cag tcc 4552  
 Cys Ser Asn Arg Leu Cys Lys Leu Pro Ser Phe Ile Ser Leu Gln Ser  
 955 960 965  
 tcg ccg agc cca gga gcc cag ccc agg gtc cgg gcc cct agg gcc ccc 4600  
 Ser Pro Ser Pro Gly Ala Gln Pro Arg Val Arg Ala Pro Arg Ala Pro  
 970 975 980  
 ctc acc aag gac tca ggg aag cct ctg cac atc aaa cca cgt ctg tga 4648  
 Leu Thr Lys Asp Ser Gly Lys Pro Leu His Ile Lys Pro Arg Leu \*  
 985 990 995 1000

ggaccccccagg gaccgggcctg cacctaccc tc agaccctcat ccttggagag gaaagaggct	4708
ctgtccacca ctctacccca caggagggcc gccccccacc aagcctcacc tggggggccac	4768
agggacactg ctctgcctgc ctggccctca accttccatg accagcgtgt gcgcagggcc	4828
tggtcttcct ccccccaagcc aggccccctgt cccccacccca ccaccttcca gggtgccagg	4888
cagggctggc ctccaggcct gtcccccact gccattggca acagtggccc tgcaaaaaaaaa	4948
agccctcccc acccaggttt tcggccccagt gaagaggcca ctggccaggc ctccaggca	5008
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<213> Homo sapiens
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                  15                 20                 25

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agc cct ggg gta ttg gac cga ttg tat ggg cac cct gcc aca tgt ctg      388
Ser Pro Gly Val Leu Asp Arg Leu Tyr Gly His Pro Ala Thr Cys Leu
          30           35           40

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gct gtc ttc agg gag ctc cca tcc ttg gct aag aac tgg gtg atg cgg 436  
Ala Val Phe Arg Glu Leu Pro Ser Leu Ala Lys Asn Trp Val Met Arg  
45 50 55

atg ctc ttt ctg gag cag cct ttg cca cag gct gct gta gct ctg tgg 484  
 Met Leu Phe Leu Glu Gln Pro Leu Pro Gln Ala Ala Val Ala Leu Trp  
           60                 65                 70

gta aag aag gaa ttc agc aag gct cag gag gaa agt aca ggg ctg ctg      532  
 Val Lys Lys Glu Phe Ser Lys Ala Gln Glu Glu Ser Thr Gly Leu Leu  
   75                80                85                90

agc ggc ctc cgg atc tgg cac aca cag ctg ctc cca ggc ggg ctc cag 580  
 Ser Gly Leu Arg Ile Trp His Thr Gln Leu Leu Pro Gly Gly Leu Gln  
                   95                 100                 105

ggc ctc atc ctc aac ccc att ttc cgc cag aac ctc cgc att gcc ctt				628
Gly Leu Ile Leu Asn Pro Ile Phe Arg Gln Asn Leu Arg Ile Ala Leu				
110	115	120		
ctg ggt ggg ggg aag gcc tgg tct gat gac aca agt cag ctg gga cca				676
Leu Gly Gly Lys Ala Trp Ser Asp Asp Thr Ser Gln Leu Gly Pro				
125	130	135		
gac aag cat gcc cgg gac gtt ccc tcc ctt gac aag tac gcc gag gag				724
Asp Lys His Ala Arg Asp Val Pro Ser Leu Asp Lys Tyr Ala Glu Glu				
140	145	150		
cga tgg gag gtg gtc ttg cac ttc atg gtg ggc tcc ccc agt gca gct				772
Arg Trp Glu Val Val Leu His Phe Met Val Gly Ser Pro Ser Ala Ala				
155	160	165	170	
gtc agc cag gac ttg gct cag ctc ctc agc cag gct ggg ctc atg aag				820
Val Ser Gln Asp Leu Ala Gln Leu Leu Ser Gln Ala Gly Leu Met Lys				
175	180	185		
agt act gaa cct gga gag ccg ccc tgc att act tcc gct ggc ttc cag				868
Ser Thr Glu Pro Gly Glu Pro Pro Cys Ile Thr Ser Ala Gly Phe Gln				
190	195	200		
ttc ctg ttg ctg gac acc ccg gct cag ctc tgg tac ttt atg ttg cag				916
Phe Leu Leu Leu Asp Thr Pro Ala Gln Leu Trp Tyr Phe Met Leu Gln				
205	210	215		
tat ttg cag aca gcc cag agc cgg ggc atg gac ctg gta gag att ctc				964
Tyr Leu Gln Thr Ala Gln Ser Arg Gly Met Asp Leu Val Glu Ile Leu				
220	225	230		
tcc ttc ctc ttc cag ctc agc ttc tct act ctg ggc aag gat tac tct				1012
Ser Phe Leu Phe Gln Leu Ser Phe Ser Thr Leu Gly Lys Asp Tyr Ser				
235	240	245	250	
gtg gaa ggt atg agt gat tct ctg ttg aac ttc ctg caa cat ctg cgt				1060
Val Glu Gly Met Ser Asp Ser Leu Leu Asn Phe Leu Gln His Leu Arg				
255	260	265		
gag ttt ggg ctt gtt ttc cag agg aag agg aaa tct cgg cgt tac tac				1108
Glu Phe Gly Leu Val Phe Gln Arg Lys Arg Lys Ser Arg Arg Tyr Tyr				
270	275	280		
ccc aca cgc ctg gcc atc aat ctc tca tca ggt gtc tct gga gct ggg				1156
Pro Thr Arg Leu Ala Ile Asn Leu Ser Ser Gly Val Ser Gly Ala Gly				
285	290	295		
ggc act gtg cat cag cca ggt ttc att gtc gtg gaa acc aat tac cga				1204
Gly Thr Val His Gln Pro Gly Phe Ile Val Val Glu Thr Asn Tyr Arg				
300	305	310		
ctg tat gcc tac acg gag tcg gag ctg cag att gcc ctc att gcc ctc				1252
Leu Tyr Ala Tyr Thr Glu Ser Glu Leu Gln Ile Ala Leu Ile Ala Leu				
315	320	325	330	
ttc tct gag atg ctc tat cgg ttc ccc aac atg gtg gtg gcg cag gtg				1300
Phe Ser Glu Met Leu Tyr Arg Phe Pro Asn Met Val Val Ala Gln Val				
335	340	345		
acc cgg gag agt gtg cag cag gca atc gcc agt ggc atc aca gcc cag				1348
Thr Arg Glu Ser Val Gln Gln Ala Ile Ala Ser Gly Ile Thr Ala Gln				
350	355	360		

cag ata atc cat ttc cta agg aca aga gcc cac cca gtg atg ctc aaa Gln Ile Ile His Phe Leu Arg Thr Arg Ala His Pro Val Met Leu Lys 365 370 375	1396
cag aca cct gtg ctg ccc ccc acc atc acc gac gag atc cggtt ctc tgg Gln Thr Pro Val Leu Pro Pro Thr Ile Thr Asp Gln Ile Arg Leu Trp 380 385 390	1444
gag ctg gaa agg gac aga ctc cggtt act gag ggt gtc ctg tat aac Glu Leu Glu Arg Asp Arg Leu Arg Phe Thr Glu Gly Val Leu Tyr Asn 395 400 405 410	1492
cag ttc ctg tcg caa gtg gac ttt gag ctg ctg gcc cac gcg cggtt Gln Phe Leu Ser Gln Val Asp Phe Glu Leu Leu Ala His Ala Arg 415 420 425	1540
gag ctg ggc gtg ctc gtg ttc gag aac tcg gcc aag cggtt ctc atg gtg Glu Leu Gly Val Leu Val Phe Glu Asn Ser Ala Lys Arg Leu Met Val 430 435 440	1588
gtg acc ccg gcc ggg cac agc gac gtc aag cggtt ttt cggtt aag cggtt Val Thr Pro Ala Gly His Ser Asp Val Lys Arg Phe Trp Lys Arg Gln 445 450 455	1636
aaa cat agc tcc tga gagcgcgggaa cttggacacg gacctcgccg ggccggactg Lys His Ser Ser * 460	1691
ggcggggcgg ggcatcagaa ctcaggtgtt ttttatttac gcgtcagggc ttttcttgtt taataaaagtt atgatagcta aaaaaaaaaaa aa	1751 1783

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<212> DNA  
<213> Homo sapiens

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tca tct cag ggt gtc cag cag ccc tcc atc tac agc ttc tcc caa ata Ser Ser Gln Gly Val Gln Gln Pro Ser Ile Tyr Ser Phe Ser Gln Ile 10 15 20 25	278
acc aga agc ttg ttt ctc agc aat ggt gtg gcc gcc aac gac aaa ctc Thr Arg Ser Leu Phe Leu Ser Asn Gly Val Ala Ala Asn Asp Lys Leu 30 35 40	326
ctt ctg tcc agc aat cgc atc acc gcc att gtc aat gcc tcc gtg gaa	374

Leu Leu Ser Ser Asn Arg Ile Thr Ala Ile Val Asn Ala Ser Val Glu			
45	50	55	
gtg gtc aac gta ttc ttc gag ggc att cag tac ata aag gtg cct gtt			422
Val Val Asn Val Phe Phe Glu Gly Ile Gln Tyr Ile Lys Val Pro Val			
60	65	70	
acc gat gct cgt gac tcg cgt ctc tac gac ttt ttt gac ccc att gct			470
Thr Asp Ala Arg Asp Ser Arg Leu Tyr Asp Phe Phe Asp Pro Ile Ala			
75	80	85	
gat ctt atc cac acc atc gat atg agg cag ggc cgt acg ctg ctg cac			518
Asp Leu Ile His Thr Ile Asp Met Arg Gln Gly Arg Thr Leu Leu His			
90	95	100	105
tgc atg gct gga gtg agc cgt tcc gcc tca ctg tgc ctt gcg tac ctc			566
Cys Met Ala Gly Val Ser Arg Ser Ala Ser Leu Cys Leu Ala Tyr Leu			
110	115	120	
atg aaa tac cac tcc atg tcg ctg gac gcc cat aca tgg acc aag			614
Met Lys Tyr His Ser Met Ser Leu Leu Asp Ala His Thr Trp Thr Lys			
125	130	135	
tcg cgc cgc ccc atc atc cgg ccc aac aac ggc ttt tgg gaa cag ctc			662
Ser Arg Arg Pro Ile Ile Arg Pro Asn Asn Gly Phe Trp Glu Gln Leu			
140	145	150	
atc aat tac gaa ttc aag ctg ttt aat aac aac acc gtg cgc atg atc			710
Ile Asn Tyr Glu Phe Lys Leu Phe Asn Asn Asn Thr Val Arg Met Ile			
155	160	165	
aac tcg ccg gta ggt aac atc cct gac atc tat gag aag gac cta cgt			758
Asn Ser Pro Val Gly Asn Ile Pro Asp Ile Tyr Glu Lys Asp Leu Arg			
170	175	180	185
acg atg ata tca atg taa gccatc ccggccagcc cctgacatct gccatcgatc			812
Thr Met Ile Ser Met *			
190			
ttgcaccaag actgaacttg aacactgaca ttttgttagt aaagaaaaacc ggatggtgcc			872
ttgttaaagg gcaagaaaaa agggaggggg ttggagttt gaacgtagta agccttacct			932
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<212> DNA  
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<222> (85)...(1611)

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	Met Gln Arg Leu Leu Thr Pro Val Lys	
1	5	

cgc att ctg caa ctg aca aga gcg gtg cag gaa acc tcc ctc aca cct Arg Ile Leu Gln Leu Thr Arg Ala Val Gln Glu Thr Ser Leu Thr Pro 10 15 20 25	159
gct cgc ctg ctc cca gta gcc cac caa agg ttt tct aca gcc tct gct Ala Arg Leu Leu Pro Val Ala His Gln Arg Phe Ser Thr Ala Ser Ala 30 35 40	207
gtc ccc ctg gcc aaa aca gat act tgg cca aag gac gtg ggc atc ctg Val Pro Leu Ala Lys Thr Asp Thr Trp Pro Lys Asp Val Gly Ile Leu 45 50 55	255
gcc ctg gag gtc tac ttc cca gcc caa tat gtg gac caa act gac ctg Ala Leu Glu Val Tyr Phe Pro Ala Gln Tyr Val Asp Gln Thr Asp Leu 60 65 70	303
gag aag tat aac aat gtg gaa gca gga aag tat aca gtg ggc ttg ggc Glu Lys Tyr Asn Asn Val Glu Ala Gly Lys Tyr Thr Val Gly Leu Gly 75 80 85	351
cag acc cgt atg ggc ttc tgc tca gtc caa gag gac atc aac tcc ctg Gln Thr Arg Met Gly Phe Cys Ser Val Gln Glu Asp Ile Asn Ser Leu 90 95 100 105	399
tgc ctg acg gtg gtg caa cgg ctg atg gag cgc ata cag ctc cca tgg Cys Leu Thr Val Val Gln Arg Leu Met Glu Arg Ile Gln Leu Pro Trp 110 115 120	447
gac tct gtg ggc agg ctg gaa gta ggc act gag acc atc att gac aag Asp Ser Val Gly Arg Leu Glu Val Gly Thr Glu Thr Ile Ile Asp Lys 125 130 135	495
tcc aaa gct gtc aaa aca gtg ctc atg gaa ctc ttc cag gat tca ggc Ser Lys Ala Val Lys Thr Val Leu Met Glu Leu Phe Gln Asp Ser Gly 140 145 150	543
aat act gat att gag ggc ata gat acc acc aat gcc tgc tac ggt ggt Asn Thr Asp Ile Glu Gly Ile Asp Thr Thr Asn Ala Cys Tyr Gly Gly 155 160 165	591
act gcc tcc ctc ttc aat gct gcc aac tgg atg gag tcc agt tcc tgg Thr Ala Ser Leu Phe Asn Ala Ala Asn Trp Met Glu Ser Ser Ser Trp 170 175 180 185	639
gat ggt cgt tat gcc atg gtg gtc tgt gga gac att gcc gtc tat ccc Asp Gly Arg Tyr Ala Met Val Val Cys Gly Asp Ile Ala Val Tyr Pro 190 195 200	687
agt ggt aat gct cgt ccc aca ggt ggg gcc gga gct gtg gct atg ctg Ser Gly Asn Ala Arg Pro Thr Gly Gly Ala Gly Ala Val Ala Met Leu 205 210 215	735
att ggg ccc aag gcc cct ctg gcc ctg gag cga ggg ctg agg gga acc Ile Gly Pro Lys Ala Pro Leu Ala Leu Glu Arg Gly Leu Arg Gly Thr 220 225 230	783
cat atg gag aat gtg tat gac ttc tac aaa cca aat ttg gcc tcg gag His Met Glu Asn Val Tyr Asp Phe Tyr Lys Pro Asn Leu Ala Ser Glu 235 240 245	831
tac cca ata gtg gat ggg aag ctt tcc atc cag tgc tac ttg cgg gcc Tyr Pro Ile Val Asp Gly Lys Leu Ser Ile Gln Cys Tyr Leu Arg Ala 250 255 260 265	879

ttg gat cga tgt tac aca tca tac cgt aaa aaa atc cag aat cag tgg Leu Asp Arg Cys Tyr Thr Ser Tyr Arg Lys Lys Ile Gln Asn Gln Trp 270 275 280	927
aag caa gct ggc agc gat cga ccc ttc acc ctt gac gat tta cag tac Lys Gln Ala Gly Ser Asp Arg Pro Phe Thr Leu Asp Asp Leu Gln Tyr 285 290 295	975
atg atc ttt cat aca ccc ttt tgc aag atg gtc cag aag tct ctg gct Met Ile Phe His Thr Pro Phe Cys Lys Met Val Gln Lys Ser Leu Ala 300 305 310	1023
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agc tta tat aag ggg ctg gag gct ttc ggg ggg cta aag ctg gaa gac Ser Leu Tyr Lys Gly Leu Glu Ala Phe Gly Gly Leu Lys Leu Glu Asp 330 335 340 345	1119
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aca tca gac ctg cca aaa cgc cta gcc tcc cga aag tgt gtg tct cct Thr Ser Asp Leu Pro Lys Arg Leu Ala Ser Arg Lys Cys Val Ser Pro 445 450 455	1455
gag gag ttc aca gaa ata atg aac caa aga gag caa ttc tac cat aag Glu Glu Phe Thr Glu Ile Met Asn Gln Arg Glu Gln Phe Tyr His Lys 460 465 470	1503
gtg aat ttc tcc cca cct ggt gac aca aac agc ctt ttc cca ggt act Val Asn Phe Ser Pro Pro Gly Asp Thr Asn Ser Leu Phe Pro Gly Thr 475 480 485	1551
tgg tac ctg gag cga gtg gac gag cag cat cgc cga aag tat gcc cgg Trp Tyr Leu Glu Arg Val Asp Glu Gln His Arg Arg Lys Tyr Ala Arg 490 495 500 505	1599
cgt ccc gtc taa agg tggtctgcag atccatggaa agcttcctgg gaaacgtatg Arg Pro Val *	1654

ctagcagagc ttctccccgt gaatcatatt tttaagatcc cactcttagc tggtaaatga 1714  
 atttgaatcg acatagtagc cccataagca tcagccctgt agagtgagga gccatctcta 1774  
 gcggggccctt cattcctctc catgctgcaa tcactgtcct gggcttatgg tgctatggac 1834  
 taggggtcct ttgtgaaaga gcaagatgga gcaatggaga gaagacctct tcctgaatca 1894  
 ctggactcca gaaaatgtgca tgcagatcag ctgttcctt caagatccag ataaactttc 1954  
 ctgtcatgtg ttagaacttt attattatta atattgttaa acttctgtgc tgttcctgtg 2014  
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 <222> (231)..(2906)

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 ccccccctctgc tgagcctcgg ttaattataa ctctgaccta agtgcctgt gacgtcaagc 180  
 ccggccccagc cctgcccagg agacccagca accaggtcca tgtctcagcc atg ctc 236  
 Met Leu  
 1

ccc acg gag gtc ccc caa tcc cac ccg ggc ccc tca gcg ttg ctt ctg	284		
Pro Thr Glu Val Pro Gln Ser His Pro Gly Pro Ser Ala Leu Leu Leu			
5	10	15	

ctg cag ctg ttg ctg ccc aca tct gcc ttc ttc ccc aac atc tgg 332  
 Leu Gln Leu Leu Leu Pro Pro Thr Ser Ala Phe Phe Pro Asn Ile Trp  
 20 25 30

agc ctg ctg gct gcc cct ggc tcc atc acc cac caa gac cta act gag	380			
Ser Leu Leu Ala Ala Pro Gly Ser Ile Thr His Gln Asp Leu Thr Glu				
35	40	45	50	

gag gca gcg ctc aac gtc acc ctg cag ctc ttc ctg gag cag cca ccc 428  
 Glu Ala Ala Leu Asn Val Thr Leu Gln Leu Phe Leu Glu Gln Pro Pro  
 55 60 65

cca ggc cgc ccc cct ctt cgt ctt gag gac ttc ctg ggt cga aca ctc	476		
Pro Gly Arg Pro Pro Leu Arg Leu Glu Asp Phe Leu Gly Arg Thr Leu			
70	75	80	

ctt gct gat gac ctc ttt gcc tac ttt gga cct ggt tct tct cgg 524  
 Leu Ala Asp Asp Leu Phe Ala Ala Tyr Phe Gly Pro Gly Ser Ser Arg  
 85 90 95

cgg ttc cga gca gcc tta ggt gag gtg tct cgt gcc aat gca gcc cag 572

Arg Phe Arg Ala Ala Leu Gly Glu Val Ser Arg Ala Asn Ala Ala Gln			
100	105	110	
gac ttc ctg cca act tcc agg aat gac ccc gac ctg cac ttt gat gct			620
Asp Phe Leu Pro Thr Ser Arg Asn Asp Pro Asp Leu His Phe Asp Ala			
115	120	125	130
gag cga ctg ggt cag gga cgc gcg ctg gta ggg gct ctg cgg gag			668
Glu Arg Leu Gly Gln Gly Arg Ala Arg Leu Val Gly Ala Leu Arg Glu			
135	140	145	
acc gtg gtg gca gcc agg gcc ctt gac cac acc ctg gct cgc cag cgc			716
Thr Val Val Ala Ala Arg Ala Leu Asp His Thr Leu Ala Arg Gln Arg			
150	155	160	
ctc ggg gct gca ctt cat gcc ctg cag gat ttc tac agt cat agc aac			764
Leu Gly Ala Ala Leu His Ala Leu Gln Asp Phe Tyr Ser His Ser Asn			
165	170	175	
tgg gtg gag ctg ggc gag cag cag cca cac cct cac ctc ctc tgg cca			812
Trp Val Glu Leu Gly Glu Gln Gln Pro His Pro His Leu Leu Trp Pro			
180	185	190	
agg cag gag ctc cag aac ctg gca caa gtg gcc gat cct acc tgc tcc			860
Arg Gln Glu Leu Gln Asn Leu Ala Gln Val Ala Asp Pro Thr Cys Ser			
195	200	205	210
gat tgc gag gag ttg agc tgc ccc agg aat tgg ctg ggc ttc aca ctc			908
Asp Cys Glu Glu Leu Ser Cys Pro Arg Asn Trp Leu Gly Phe Thr Leu			
215	220	225	
ctc acc tct ggc tac ttt gga act cat ccc ccg aaa cct cca ggg aaa			956
Leu Thr Ser Gly Tyr Phe Gly Thr His Pro Pro Lys Pro Pro Gly Lys			
230	235	240	
tgt agc cac ggg ggc cat ttt gac cgg agc agc tcc cag cca ccg agg			1004
Cys Ser His Gly Gly His Phe Asp Arg Ser Ser Ser Gln Pro Pro Arg			
245	250	255	
gga ggc atc aac aag gac agc aca tcc cca ggc ttc tcc cct cac cac			1052
Gly Gly Ile Asn Lys Asp Ser Thr Ser Pro Gly Phe Ser Pro His His			
260	265	270	
atg ctg cac ctc cag gct gca aaa ctg gcc ctt cta gcc tcc atc cag			1100
Met Leu His Leu Gln Ala Ala Lys Leu Ala Leu Leu Ala Ser Ile Gln			
275	280	285	290
gcc ttc agc ctt ctg cga agc cgc ctg gga gac agg gat ttc tcc agg			1148
Ala Phe Ser Leu Leu Arg Ser Arg Leu Gly Asp Arg Asp Phe Ser Arg			
295	300	305	
ctg ctg gac atc acc cca gcc tcc agc ctg agc ttt gtc ctg gac acc			1196
Leu Leu Asp Ile Thr Pro Ala Ser Ser Leu Ser Phe Val Leu Asp Thr			
310	315	320	
acg ggc agc atg ggt gag gag atc aac gct gcc aaa atc cag gct cgc			1244
Thr Gly Ser Met Gly Glu Ile Asn Ala Ala Lys Ile Gln Ala Arg			
325	330	335	
cac ctt gtg gag cag cgg aga ggc agc ccc atg gag cct gtc cac tat			1292
His Leu Val Glu Gln Arg Arg Gly Ser Pro Met Glu Pro Val His Tyr			
340	345	350	
gtc ctg gtg cct ttt cat gac cca ggg ttc ggc cct gtc ttt aca acc			1340

Val Leu Val Pro Phe His Asp Pro Gly Phe Gly Pro Val Phe Thr Thr			
355	360	365	370
agt gac cct gac agc ttc tgg caa cag ctt aat gag atc cat gcc ttg			1388
Ser Asp Pro Asp Ser Phe Trp Gln Gln Leu Asn Glu Ile His Ala Leu			
375	380	385	
ggg ggt gga gac gag cct gag atg tgc ctg tca gcc ctg cag ctg gcc			1436
Gly Gly Gly Asp Glu Pro Glu Met Cys Leu Ser Ala Leu Gln Leu Ala			
390	395	400	
ctg ctg cac aca cct cca ctc tca gat atc ttt gtc ttc acg gat gcc			1484
Leu Leu His Thr Pro Pro Leu Ser Asp Ile Phe Val Phe Thr Asp Ala			
405	410	415	
tcc ccc aag gat gcc ttt ctc acc aac cag gtg gaa tcc ctg act cag			1532
Ser Pro Lys Asp Ala Phe Leu Thr Asn Gln Val Ser Leu Thr Gln			
420	425	430	
gag cgg cgc tgc cgg gta aca ttc ctg gtg act gaa gat aca tca agg			1580
Glu Arg Arg Cys Arg Val Thr Phe Leu Val Thr Glu Asp Thr Ser Arg			
435	440	445	450
gtt cag ggt cga gct cgg cgt gag atc ttg tcc cct ctg cgt ttt gag			1628
Val Gln Gly Arg Ala Arg Arg Glu Ile Leu Ser Pro Leu Arg Phe Glu			
455	460	465	
cca tac aaa gca gtg gcc ctg gcc tca gga gga gag gtg atc ttc acc			1676
Pro Tyr Lys Ala Val Ala Leu Ala Ser Gly Gly Glu Val Ile Phe Thr			
470	475	480	
aaa gac cag cac att cga gac gtg gca gcc att gtt ggg gag agc atg			1724
Lys Asp Gln His Ile Arg Asp Val Ala Ala Ile Val Gly Glu Ser Met			
485	490	495	
gct gcc ctg gtg act ctt ccc ctg gac cct cct gtt gtg gtg cct ggg			1772
Ala Ala Leu Val Thr Leu Pro Leu Asp Pro Pro Val Val Val Pro Gly			
500	505	510	
cag cca ctt gtg ttc agc gtg gat ggg ctg ctc cag aag atc aca gtc			1820
Gln Pro Leu Val Phe Ser Val Asp Gly Leu Leu Gln Lys Ile Thr Val			
515	520	525	530
cgg atc cac gga gac atc agc agc ttc tgg atc aag aac cct gca ggg			1868
Arg Ile His Gly Asp Ile Ser Ser Phe Trp Ile Lys Asn Pro Ala Gly			
535	540	545	
gtc tcc cag ggc cag gag gaa ggc ggg ggt cct cta ggt cac act cgc			1916
Val Ser Gln Gly Gln Glu Gly Gly Pro Leu Gly His Thr Arg			
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cgc ttt ggg cag ttc tgg atg gtg acc atg gat gac cct cca cag aca			1964
Arg Phe Gly Gln Phe Trp Met Val Thr Met Asp Asp Pro Pro Gln Thr			
565	570	575	
gga acc tgg gag atc cag gtc aca gct gag gac acc cct ggg gtg aga			2012
Gly Thr Trp Glu Ile Gln Val Thr Ala Glu Asp Thr Pro Gly Val Arg			
580	585	590	
gtg caa gcc cag acc tcc ctg gac ttc ctc ttc cac ttt ggg atc ccc			2060
Val Gln Ala Gln Thr Ser Leu Asp Phe Leu Phe His Phe Gly Ile Pro			
595	600	605	610
atg gag gat gga ccc cac cct ggc ctc tac ccc ctg act cag cca gtt			2108

Met	Glu	Asp	Gly	Pro	His	Pro	Gly	Leu	Tyr	Pro	Leu	Thr	Gln	Pro	Val	
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630								635					640			
aga gcc aat cct ggg gat cct cag ccg cat ttc tcc cac gtc atc ctt Arg Ala Asn Pro Gly Asp Pro Gln Pro His Phe Ser His Val Ile Leu															2204	
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725								730					735			
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755								760					765			770
tcc aac ctc tcc agg gct cac ctg gaa ctg aat gag tcg gcc tgg ggc Ser Asn Leu Ser Arg Ala His Leu Glu Leu Asn Glu Ser Ala Trp Gly															2588	
775								780					785			
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790								795					800			
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805								810					815			
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820								825					830			
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835								840					845			850
acc cct gcc ttt tcc ccc ttc aca ttg gtg act caa ggc agg gct ggg Thr Pro Ala Phe Ser Pro Phe Thr Leu Val Thr Gln Gly Arg Ala Gly															2828	
855								860					865			
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Ala Gly Leu Ala Ala Gly Ser Pro Trp Trp Gly Thr Val Gly Gly Val  
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Leu Leu Leu Leu Gly Leu Ala Ser Trp *	
885                    890	
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Met Thr Val Phe Ser Gly Leu	
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Phe Val Gly Gly Leu Pro Pro Glu Leu Arg Ala Ala Ala Leu Lys Leu	
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acc ctg gcc tcg gtg agg gag cgg gag ccc ttc aag ggg tgg att cgt	327
Thr Leu Ala Ser Val Arg Glu Arg Glu Pro Phe Lys Gly Trp Ile Arg	
25                    30                    35	
gac gtg agg gtc aac tcc tcg cag gtc ctg ccc gtg gac agc ggc gag	375
Asp Val Arg Val Asn Ser Ser Gln Val Leu Pro Val Asp Ser Gly Glu	
40                    45                    50                    55	
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Val Lys Leu Asp Asp Glu Pro Pro Asn Ser Gly Gly Ser Pro Cys	
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Glu Ala Gly Glu Gly Glu Gly Val Cys Leu Asn Gly Gly Val	
75                    80                    85	
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Cys Ser Val Val Asp Asp Gln Ala Val Cys Asp Cys Ser Arg Thr Gly	
90                    95                    100	

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ttc aaa gga tct gaa tac ttc tgc tac gac ttg tct caa aac ccc att Phe Lys Gly Ser Glu Tyr Phe Cys Tyr Asp Leu Ser Gln Asn Pro Ile 140 145 150	663
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 His Gln Lys Asp Ala Lys His Pro Gln Met Ile Lys Val Asp Phe Phe  
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ggg ata gta gcc gct gcc gcc ctg tgc atc ctt atc ctc ctc tat gcc Gly Ile Val Ala Ala Ala Leu Cys Ile Leu Ile Leu Tyr Ala 1260                    1265                    1270	4023
atg tac aag tac aga aac cgg gat gaa ggc tca tac cat gtg gac gag Met Tyr Lys Tyr Arg Asn Arg Asp Glu Gly Ser Tyr His Val Asp Glu 1275                    1280                    1285	4071
agt cga aac tac atc agt aac tca gca cag tcc aat ggg gct gtt gta Ser Arg Asn Tyr Ile Ser Asn Ser Ala Gln Ser Asn Gly Ala Val Val 1290                    1295                    1300	4119
aag gag aaa caa ccc agc agt gcg aaa agc tcc aac aaa aat aag aaa Lys Glu Lys Gln Pro Ser Ser Ala Lys Ser Ser Asn Lys Asn Lys Lys 1305                    1310                    1315	4167
aac aag gat aaa gag tat tat gtc tga tccca agatctaaa tggacacttg Asn Lys Asp Lys Glu Tyr Tyr Val *	4219
1320                    1325	
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tgaagcacat acaaaaagaag acaggaaatg caatcaggaa ggaaagactt tttaaaaaat	4339
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ggccaataaaa ttccctaaca tccacagtgt tttcatttac tctgcttgc tttatgtgc	4459
tggAACATTt ctaaaagaca gtgatgaccg cacgcattca taaAGCAAAG gagTACTACA	4519
gcatcaaggc acaacacaaa aaccaacaca aaacataaca caaaaggagg ctacctatga	4579

tcctggattt	agccaaagtgc	ctagcgctt	cctgagaagt	cagtccaaatt	gccagagaag	4639
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6523

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atg	cct	aag	aag	ccc	agt											
Met	Pro	Lys	Arg	Lys	Pro	Ser	Glu	Gly	Ala	Met	Ser	Asp	Lys	Val	Lys	106
1	5				10						15					

gct agt ttg agt tac aga gga gat cag cag gat tat ttt cta aac cta  
 Ala Ser Leu Ser Tyr Arg Gly Asp Gln Gln Asp Tyr Phe Leu Asn Leu  
 20 25 30 154

ccc ctc caa aac cag aga cca ggc cta aga agg acc ctg caa atc aga  
 Pro Leu Gln Asn Gln Arg Pro Gly Leu Arg Arg Thr Leu Gln Ile Arg  
 35 40 45 202

gac aga agc tgc cta aag tga ga aaggaaaaag cagatgcata aaggaaggaa  
 Asp Arg Ser Cys Leu Lys \* 255

acagccctgc agaagagaga tggccatgg tccagacaca gaaagtggaa ggctggagaa  
 gtggctctga gcttccagtg gctctgagct tctagaggct ctgagcttgc agtggctctg  
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 ccggaaattc cggaacctgta 435 455

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atctccctgg	gccggaggcc	actgtcttct	cttcctcc	caccgagtcg	tgctctcgcc	120	
ccaaccggcg	cgccagacac	tgccctaacc	atc atg gag	gtg gcc gag	gtg gaa		
			Met	Glu	Val	Ala	234
1	5						

agt cct ctg aac ccc agc tgt aag ata atg acc ttc aga ccc tcc atg 282

Ser Pro Leu Asn Pro Ser Cys Lys Ile Met Thr Phe Arg Pro Ser Met			
10	15	20	
gag gag ttc cgg gag ttc aac aaa tac ctt gca tac atg gag tct aaa			330
Glu Glu Phe Arg Glu Phe Asn Lys Tyr Leu Ala Tyr Met Glu Ser Lys			
25	30	35	
gga gcc cat cgt gcg ggt ctt gca aag gtg att cct cct aag gag tgg			378
Gly Ala His Arg Ala Gly Leu Ala Lys Val Ile Pro Pro Lys Glu Trp			
40	45	50	55
aag cca aga cag tgc tat gat gac att gat aat ttg ctc att cca gca			426
Lys Pro Arg Gln Cys Tyr Asp Asp Ile Asp Asn Leu Leu Ile Pro Ala			
60	65	70	
cca att cag cag atg gtc aca ggg cag tca gga ctg ttc act cag tac			474
Pro Ile Gln Gln Met Val Thr Gly Gln Ser Gly Leu Phe Thr Gln Tyr			
75	80	85	
aac atc cag aaa aaa gcg atg act gtg aag gag ttc agg cag ctg gcc			522
Asn Ile Gln Lys Lys Ala Met Thr Val Lys Glu Phe Arg Gln Leu Ala			
90	95	100	
aac agt ggc aaa tat tgt act cca aga tac ttg gat tac gaa gat ttg			570
Asn Ser Gly Lys Tyr Cys Thr Pro Arg Tyr Leu Asp Tyr Glu Asp Leu			
105	110	115	
gag cgc aag tac tgg aag aac tta act ttt gtg gca cct atc tat ggt			618
Glu Arg Lys Tyr Trp Lys Asn Leu Thr Phe Val Ala Pro Ile Tyr Gly			
120	125	130	135
gca gat att aat ggg agc ata tat gat gag ggt gtg gat gaa tgg aac			666
Ala Asp Ile Asn Gly Ser Ile Tyr Asp Glu Gly Val Asp Glu Trp Asn			
140	145	150	
ata gct cgc ctc aat aca gtc ttg gat gtg gtt gaa gaa gag tgt ggc			714
Ile Ala Arg Leu Asn Thr Val Leu Asp Val Val Glu Glu Glu Cys Gly			
155	160	165	
att tct att gag ggt gta aat acc cca tat ctc tat ttt ggc atg tgg			762
Ile Ser Ile Glu Gly Val Asn Thr Pro Tyr Leu Tyr Phe Gly Met Trp			
170	175	180	
aag acc acg ttt gca tgg cac acc gaa gac atg gac ctc tat agc att			810
Lys Thr Thr Phe Ala Trp His Thr Glu Asp Met Asp Leu Tyr Ser Ile			
185	190	195	
aat tat ctc cac ttt gga gag ccc aag tct tgg tat gct ata cct ccg			858
Asn Tyr Leu His Phe Gly Glu Pro Lys Ser Trp Tyr Ala Ile Pro Pro			
200	205	210	215
gag cat gga aaa cga ctt gaa aga cta gct caa ggt ttt ttc cca agc			906
Glu His Gly Lys Arg Leu Glu Arg Leu Ala Gln Gly Phe Phe Pro Ser			
220	225	230	
agc tcc caa ggg tgt gat gca ttt ctt cgc cac aag atg aca ttg att			954
Ser Ser Gln Gly Cys Asp Ala Phe Leu Arg His Lys Met Thr Leu Ile			
235	240	245	
tct cca tca gta ttg aag aaa tat ggt att ccc ttt gac aag ata acc			1002
Ser Pro Ser Val Leu Lys Lys Tyr Gly Ile Pro Phe Asp Lys Ile Thr			
250	255	260	
cag gag gct gga gaa ttc atg atc act ttc cca tat ggc tac cat gct			1050

Gln Glu Ala Gly Glu Phe Met Ile Thr Phe Pro Tyr Gly Tyr His Ala  
 265                    270                    275

ggt ttt aat cat ggt ttc aac tgt gca gaa tct aca aat ttt gct act      1098  
 Gly Phe Asn His Gly Phe Asn Cys Ala Glu Ser Thr Asn Phe Ala Thr  
 280                    285                    290                    295

gtc aga tgg att gac tat gga aaa gtt gcc aaa ttg tgc act tgc agg      1146  
 Val Arg Trp Ile Asp Tyr Gly Lys Val Ala Lys Leu Cys Thr Cys Arg  
 300                    305                    310

aaa gac atg gtg aag att tca atg gat atc ttt gtg agg aaa ttt cag      1194  
 Lys Asp Met Val Lys Ile Ser Met Asp Ile Phe Val Arg Lys Phe Gln  
 315                    320                    325

cca gac aga tat cag ctt tgg aaa caa gga aag gat ata tac acc att      1242  
 Pro Asp Arg Tyr Gln Leu Trp Lys Gln Gly Lys Asp Ile Tyr Thr Ile  
 330                    335                    340

gat cac acg aag cct act cca gca tcc acc cct gaa gta aaa gca tgg      1290  
 Asp His Thr Lys Pro Thr Pro Ala Ser Thr Pro Glu Val Lys Ala Trp  
 345                    350                    355

ctg cag agg agg agg aaa gta aga aaa gca tcc cga agc ttc cag tgt      1338  
 Leu Gln Arg Arg Lys Val Arg Lys Ala Ser Arg Ser Phe Gln Cys  
 360                    365                    370                    375

gct agg tct acc tct aaa agg cct aag gct gat gag gaa gag gaa gtg      1386  
 Ala Arg Ser Thr Ser Lys Arg Pro Lys Ala Asp Glu Glu Glu Val  
 380                    385                    390

tca gat gaa gtc gat ggg gca gag gtc cct aac ccc gac tca gtc aca      1434  
 Ser Asp Glu Val Asp Gly Ala Glu Val Pro Asn Pro Asp Ser Val Thr  
 395                    400                    405

gat gac ctc aag gtc agt gaa aag tca gaa gca gca gtg aag ctg agg      1482  
 Asp Asp Leu Lys Val Ser Glu Lys Ser Glu Ala Ala Val Lys Leu Arg  
 410                    415                    420

aac aca gaa gca tct tca gaa gaa gag tca tct gct agc agg atg cag      1530  
 Asn Thr Glu Ala Ser Ser Glu Glu Ser Ser Ala Ser Arg Met Gln  
 425                    430                    435

gtg gag cag aat tta tca gat cat atc aaa ctc tca gga aac agc tgc      1578  
 Val Glu Gln Asn Leu Ser Asp His Ile Lys Leu Ser Gly Asn Ser Cys  
 440                    445                    450                    455

tta agt aca tct gta aca gaa gac ata aaa act gag gat gac aaa gct      1626  
 Leu Ser Thr Ser Val Thr Glu Asp Ile Lys Thr Glu Asp Asp Lys Ala  
 460                    465                    470

tat gca tat aga agt gta cct tct ata tcc agt gag gct gat gat tcc      1674  
 Tyr Ala Tyr Arg Ser Val Pro Ser Ile Ser Ser Glu Ala Asp Asp Ser  
 475                    480                    485

att cca ttg tct act ggc tat gag aag ccc gag aaa tca gac cca tcc      1722  
 Ile Pro Leu Ser Thr Gly Tyr Glu Lys Pro Glu Lys Ser Asp Pro Ser  
 490                    495                    500

gag ctt tca tgg cca aag tca cct gag tca tgc tca tca gtg gca gag      1770  
 Glu Leu Ser Trp Pro Lys Ser Pro Glu Ser Cys Ser Ser Val Ala Glu  
 505                    510                    515

agt aat ggt gtg tta aca gag gga gaa gag agt gat gtg gag agc cat      1818

Ser Asn Gly Val Leu Thr Glu Gly Glu Glu Ser Asp Val Glu Ser His				
520	525	530	535	
ggg aat ggc ctt gaa cct ggg gaa atc cca gcg gtc ccc agt gga gag				1866
Gly Asn Gly Leu Glu Pro Gly Glu Ile Pro Ala Val Pro Ser Gly Glu				
540	545	550		
aga aat agc ttc aaa gtc ccc agt ata gca gag gga gag aac aaa acc				1914
Arg Asn Ser Phe Lys Val Pro Ser Ile Ala Glu Gly Glu Asn Lys Thr				
555	560	565		
tct aag agt tgg cgc cat cca ctt agc agg cct cca gca aga tct ccg				1962
Ser Lys Ser Trp Arg His Pro Leu Ser Arg Pro Pro Ala Arg Ser Pro				
570	575	580		
atg act ctt gtg aag cag cag gcg cca agt gat gaa gaa ttg cct gag				2010
Met Thr Leu Val Lys Gln Gln Ala Pro Ser Asp Glu Glu Leu Pro Glu				
585	590	595		
gtt ctg tcc att gag gag gaa gtg gaa gaa aca gag tct tgg gcg aaa				2058
Val Leu Ser Ile Glu Glu Val Glu Glu Thr Glu Ser Trp Ala Lys				
600	605	610	615	
cct ctc atc cac ctt tgg cag acg aag tcc cct aac ttc gca gct gag				2106
Pro Leu Ile His Leu Trp Gln Thr Lys Ser Pro Asn Phe Ala Ala Glu				
620	625	630		
caa gag tat aat gca aca gtg gcc agg atg aag cca cac tgt gcc atc				2154
Gln Glu Tyr Asn Ala Thr Val Ala Arg Met Lys Pro His Cys Ala Ile				
635	640	645		
tgc act ctg ctc atg ccg tac cac aag cca gat agc agc aat gaa gaa				2202
Cys Thr Leu Leu Met Pro Tyr His Lys Pro Asp Ser Ser Asn Glu Glu				
650	655	660		
aat gat gct aga tgg gag aca aaa tta gat gaa gtc gtt aca tcg gag				2250
Asn Asp Ala Arg Trp Glu Thr Lys Leu Asp Glu Val Val Thr Ser Glu				
665	670	675		
gga aag act aag ccc ctc ata cca gag atg tgt ttt att tat agt gaa				2298
Gly Lys Thr Lys Pro Leu Ile Pro Glu Met Cys Phe Ile Tyr Ser Glu				
680	685	690	695	
gaa aat ata gaa tat tct cca ccc aat gcc ttc ctt gaa gag gat gga				2346
Glu Asn Ile Glu Tyr Ser Pro Pro Asn Ala Phe Leu Glu Glu Asp Gly				
700	705	710		
aca agt ctc ctt att tcc tgt gca aag tgc tgc gta cgg gtt cat gca				2394
Thr Ser Leu Leu Ile Ser Cys Ala Lys Cys Cys Val Arg Val His Ala				
715	720	725		
agt tgt tat ggt att cct tct cat gag atc tgt gat gga tgg ctg tgt				2442
Ser Cys Tyr Gly Ile Pro Ser His Glu Ile Cys Asp Gly Trp Leu Cys				
730	735	740		
gcc cggtgc aaa aga aat gcg tgg aca gca gaa tgc tgt ctc tgc aat				2490
Ala Arg Cys Lys Arg Asn Ala Trp Thr Ala Glu Cys Cys Leu Cys Asn				
745	750	755		
ttg aga gga ggt gct ctt aag caa acg aag aac aat aag tgg gcc cat				2538
Leu Arg Gly Gly Ala Leu Lys Gln Thr Lys Asn Asn Lys Trp Ala His				
760	765	770	775	
gtc atg tgc gcc gtt gcg gtc cca gaa gtt cga ttc act aat gtc cca				2586

Val Met Cys Ala Val Ala Val Pro Glu Val Arg Phe Thr Asn Val Pro			
780	785	790	
gaa agg aca caa ata gat gta ggc aga ata cct tta cag agg tta aaa		2634	
Glu Arg Thr Gln Ile Asp Val Gly Arg Ile Pro Leu Gln Arg Leu Lys			
795	800	805	
ttg aaa tgc atc ttc tgc aga cac cgg gtt aag agg gtc tct gga gcc		2682	
Leu Lys Cys Ile Phe Cys Arg His Arg Val Lys Arg Val Ser Gly Ala			
810	815	820	
tgc atc cag tgt tcc tac ggt cgc tgc ccg gcc tcc ttc cat gtc act		2730	
Cys Ile Gln Cys Ser Tyr Gly Arg Cys Pro Ala Ser Phe His Val Thr			
825	830	835	
tgt gcc cat gct ggg gta ctg atg gag cct gat gat tgg cct tat		2778	
Cys Ala His Ala Ala Gly Val Leu Met Glu Pro Asp Asp Trp Pro Tyr			
840	845	850	855
gtg gtg aac att aca tgc ttt cga cat aag gtc aac ccc aac gtg aag		2826	
Val Val Asn Ile Thr Cys Phe Arg His Lys Val Asn Pro Asn Val Lys			
860	865	870	
tcc aag gct tgc gag aag gtc att tcc gtg ggt caa acg gtc atc acg		2874	
Ser Lys Ala Cys Glu Lys Val Ile Ser Val Gly Gln Thr Val Ile Thr			
875	880	885	
aag cat cgg aac acc cgg tat tac agt tgc aga gtg atg gct gtg aca		2922	
Lys His Arg Asn Thr Arg Tyr Ser Cys Arg Val Met Ala Val Thr			
890	895	900	
tcg cag acc ttc tat gag gtc atg ttt gat gat ggc tcc ttt agc aga		2970	
Ser Gln Thr Phe Tyr Glu Val Met Phe Asp Asp Gly Ser Phe Ser Arg			
905	910	915	
gac aca ttt cct gag gat atc gtg agc cga gac tgt ctg aag ctg ggc		3018	
Asp Thr Phe Pro Glu Asp Ile Val Ser Arg Asp Cys Leu Lys Leu Gly			
920	925	930	935
cca cct gct gag gga gaa gtc gtc caa gtc aag tgg ccc gat ggc aaa		3066	
Pro Pro Ala Glu Gly Glu Val Val Gln Val Lys Trp Pro Asp Gly Lys			
940	945	950	
ctc tat gga gca aaa tat ttt gga tca aat att gcc cac atg tac cag		3114	
Leu Tyr Gly Ala Lys Tyr Phe Gly Ser Asn Ile Ala His Met Tyr Gln			
955	960	965	
gtt gag ttg aag atg gat ccc aga tag caatg aagagagagg acatctacac		3166	
Val Glu Leu Lys Met Asp Pro Arg *			
970	975		
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	Met Ser Val
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cgt gtg gct ccc cag ggc ctg gag cgg gta cca gga atc ttc atc tcc	702
Arg Val Ala Pro Gln Gly Leu Glu Arg Val Pro Gly Ile Phe Ile Ser	

cgc ctg gta cgt ggg ggt ctg gct gag agt aca ggg ctg ctg gcg gtc Arg Leu Val Arg Gly Gly Leu Ala Glu Ser Thr Gly Leu Leu Ala Val 20 25 30 35	750
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gtc act gtc aag ccc gcc aac cag cgc aat aac gtg gtg cga ggg gca Val Thr Val Lys Pro Ala Asn Gln Arg Asn Asn Val Val Arg Gly Ala 70 75 80	894
tct ggg cgt ttg aca ggt cct ccc tct gca ggg cct ggg cct gct gag Ser Gly Arg Leu Thr Gly Pro Pro Ser Ala Gly Pro Gly Pro Ala Glu 85 90 95	942
cct gat agt gac gat gac agc agt gac ctg gtc att gag aac cgc cag Pro Asp Ser Asp Asp Ser Ser Asp Leu Val Ile Glu Asn Arg Gln 100 105 110 115	990
cct ccc agt tcc aat ggg ctg tct cag ggg ccc ccg tgc tgg gac ctg Pro Pro Ser Ser Asn Gly Leu Ser Gln Gly Pro Pro Cys Trp Asp Leu 120 125 130	1038
cac cct ggc tgc cga cat cct ggt acc cgc agc tct ctg ccc tcc ctg His Pro Gly Cys Arg His Pro Gly Thr Arg Ser Ser Leu Pro Ser Leu 135 140 145	1086
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aaccaagtct tggtgagtaa gcttttagt tggttccag tgttatcttc caagaatcgt	120
atattctaga ttgttatcttc cagatgtatc ctggagcaag cagctaagtc acttttgttt	180
ggtctcaatg ttgttaaca caggggaggc cgttcctggc tttgtagctc gctcaag	237

atg gcg gcg cag cca ccc cgc ggg ata cgc ctc agc gcg ctt tgc ccg Met Ala Ala Gln Pro Pro Arg Gly Ile Arg Leu Ser Ala Leu Cys Pro	285
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20 25 30	
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35 40 45	
caa ata tgg att gac aaa aca gtg ata aat gac cat ata tgc ttg aca Gln Ile Trp Ile Asp Lys Thr Val Ile Asn Asp His Ile Cys Leu Thr	429
50 55 60	
ttc acc gac aat ggg aat ggt atg act tct gat aaa tta cat aaa atg Phe Thr Asp Asn Gly Asn Gly Met Thr Ser Asp Lys Leu His Lys Met	477
65 70 75 80	
cta agc ttt ggc ttc agt gac aaa gtc acc atg aat ggt cat gtc cca Leu Ser Phe Gly Phe Ser Asp Lys Val Thr Met Asn Gly His Val Pro	525
85 90 95	
gtt gga tta tat ggg aat ggc ttc aag tcg ggt tct atg cgt ctg ggt Val Gly Leu Tyr Gly Asn Gly Phe Lys Ser Gly Ser Met Arg Leu Gly	573
100 105 110	
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115 120 125	
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130 135 140	
gtt cca ata gtg gca ttc aac aag cac cga cag atg att aat tta gca Val Pro Ile Val Ala Phe Asn Lys His Arg Gln Met Ile Asn Leu Ala	717
145 150 155 160	
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165 170 175	
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180 185 190	
ggg acg agg atc atc att tgg aat ctt aga agc tac aaa aat gca aca Gly Thr Arg Ile Ile Trp Asn Leu Arg Ser Tyr Lys Asn Ala Thr	861
195 200 205	
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210 215 220	
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225 230 235 240	
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245 250 255	

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gtg aag aca cag ctg gtt tcg aag agt ctt gcc tac atc gaa cgt gat Val Lys Thr Gln Leu Val Ser Lys Ser Leu Ala Tyr Ile Glu Arg Asp 275 280 285	1101
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ttc aac tgc aga aat aaa gat cat tat ggg ata atg atg tat cac aga Phe Asn Cys Arg Asn Lys Asp His Tyr Gly Ile Met Met Tyr His Arg 305 310 315 320	1197
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aac aac atg ggt gtt gga gtg gtt gga att ata gag tgt aat ttc ctt Asn Asn Met Gly Val Gly Val Val Gly Ile Ile Glu Cys Asn Phe Leu 340 345 350	1293
aag cca act cat aat aaa caa gat ttc gac tat act aat gag tac aga Lys Pro Thr His Asn Lys Gln Asp Phe Asp Tyr Thr Asn Glu Tyr Arg 355 360 365	1341
ctt aca ata aca gca cta gga gaa aag ctg aat gat tac tgg aat gaa Leu Thr Ile Thr Ala Leu Gly Glu Lys Leu Asn Asp Tyr Trp Asn Glu 370 375 380	1389
atg aaa gtg aag aaa aat aca gaa tat cct cta aat ttg cca gtt gaa Met Lys Val Lys Lys Asn Thr Glu Tyr Pro Leu Asn Leu Pro Val Glu 385 390 395 400	1437
gat ata cag aag cgt cct gat cag aca tgg gtt cag tgt gat gcc tgt Asp Ile Gln Lys Arg Pro Asp Gln Thr Trp Val Gln Cys Asp Ala Cys 405 410 415	1485
cta aag tgg cgg aaa tta cct gat ggg atg gat caa ctt cct gaa aaa Leu Lys Trp Arg Lys Leu Pro Asp Gly Met Asp Gln Leu Pro Glu Lys 420 425 430	1533
tgg tat tgc tcc aat aac cct gac cca cag ttc aga aat tgt gag gtt Trp Tyr Cys Ser Asn Asn Pro Asp Pro Gln Phe Arg Asn Cys Glu Val 435 440 445	1581
cca gaa gaa cct gaa gat gag gat ttg gta cat ccc act tat gaa aaa Pro Glu Glu Pro Glu Asp Glu Asp Leu Val His Pro Thr Tyr Glu Lys 450 455 460	1629
acc tac aaa aag acc aac aag gaa aaa ttc agg atc aga caa ccg gaa Thr Tyr Lys Lys Thr Asn Lys Glu Lys Phe Arg Ile Arg Gln Pro Glu 465 470 475 480	1677
atg atc cct cgg att aat gct gaa ctg ttg ttt cgg cca act gct ctt Met Ile Pro Arg Ile Asn Ala Glu Leu Leu Phe Arg Pro Thr Ala Leu 485 490 495	1725
tca act cca agc ttt tct cct aag gaa agt gtt cca aga aga cat Ser Thr Pro Ser Phe Ser Ser Pro Lys Glu Ser Val Pro Arg Arg His 500 505 510	1773

ctt tca gaa gga aca aat tct tat gcg aca aga ctt cta aat aat cat Leu Ser Glu Gly Thr Asn Ser Tyr Ala Thr Arg Leu Leu Asn Asn His 515 520 525	1821
caa gtt cca cct cag tct gaa cct gag agc aac agc ttg aaa cg <sup>g</sup> aga Gln Val Pro Pro Gln Ser Glu Pro Glu Ser Asn Ser Leu Lys Arg Arg 530 535 540	1869
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gat att gac atg aaa tca gaa cag agt cac gtt gag caa ggt ggt gtt Asp Ile Asp Met Lys Ser Glu Gln Ser His Val Glu Gln Gly Gly Val 595 600 605	2061
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act gat caa atc aaa gtg tta caa cag agg ata cta gaa atg aat gac Thr Asp Gln Ile Lys Val Leu Gln Gln Arg Ile Leu Glu Met Asn Asp 725 730 735	2445
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tcc aat aat gag agt aaa agt gaa atg gat gag atg gct gtg cag ctt Ser Asn Asn Glu Ser Lys Ser Glu Met Asp Glu Met Ala Val Gln Leu 805 810 815	2685
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930 935 940	
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c atg gac agg ccg gcg gcg gcg gcg ggc tgc gag ggc ggc Met Asp Arg Pro Ala Ala Ala Ala Ala Gly Cys Glu Gly Gly	166
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35 40 45	
gac agt ccc aca gga tca cat gtt gaa tgg tgt aaa cag ctt ata gct Asp Ser Pro Thr Gly Ser His Val Glu Trp Cys Lys Gln Leu Ile Ala	310
50 55 60	
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65 70 75	
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Ser Arg Asp Tyr Lys Ala Leu Arg Asp Gly Asn Lys Leu Ala Gln Met				
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gaa gag gct cca ctt ttc cca gga gaa tca att aaa gcc att gtg aaa				454
Glu Glu Ala Pro Leu Phe Pro Gly Glu Ser Ile Lys Ala Ile Val Lys				
100	105	110		
gat gtc atg tat atc tgc cca ttt atg gga gca gtg agt gga acc ctg				502
Asp Val Met Tyr Ile Cys Pro Phe Met Gly Ala Val Ser Gly Thr Leu				
115	120	125		
aca gtg acg gac ttt aag ctg tac ttc aaa aat gtc gag agg gac ccg				550
Thr Val Thr Asp Phe Lys Leu Tyr Phe Lys Asn Val Glu Arg Asp Pro				
130	135	140		
cat ttt atc ctt gat gtt ccc ctt gga gtg atc agc aga gtg gag aag				598
His Phe Ile Leu Asp Val Pro Leu Gly Val Ile Ser Arg Val Glu Lys				
145	150	155		
att gga gca cag agc cat gga gac aat tcc tgt ggt ata gag ata gtg				646
Ile Gly Ala Gln Ser His Gly Asp Asn Ser Cys Gly Ile Glu Ile Val				
160	165	170	175	
tgc aag gat atg agg aac ttg cgg ctt gct tat aaa cag gaa gaa cag				694
Cys Lys Asp Met Arg Asn Leu Arg Leu Ala Tyr Lys Gln Glu Glu Gln				
180	185	190		
agt aaa cta ggg ata ttt gaa aac ctc aac aaa cat gca ttt cct ctt				742
Ser Lys Leu Gly Ile Phe Glu Asn Leu Asn Lys His Ala Phe Pro Leu				
195	200	205		
tct aac gga cag gca cta ttt gca ttc agc tat aaa gaa aaa ttt cca				790
Ser Asn Gly Gln Ala Leu Phe Ala Phe Ser Tyr Lys Glu Lys Phe Pro				
210	215	220		
att aat ggc tgg aaa gtt tat gat cca gta tct gaa tat aag aga cag				838
Ile Asn Gly Trp Lys Val Tyr Asp Pro Val Ser Glu Tyr Lys Arg Gln				
225	230	235		
ggc ttg cca aat gag agt tgg aaa ata tcc aaa ata aac agt aat tat				886
Gly Leu Pro Asn Glu Ser Trp Lys Ile Ser Lys Ile Asn Ser Asn Tyr				
240	245	250	255	
gag ttc tgt gac acc tac cct gcc atc att gtt gtg cca act agt gta				934
Glu Phe Cys Asp Thr Tyr Pro Ala Ile Ile Val Val Pro Thr Ser Val				
260	265	270		
aaa gat gat gac ctt tca aaa gtg gca gct ttt cga gca aaa ggc aga				982
Lys Asp Asp Asp Leu Ser Lys Val Ala Ala Phe Arg Ala Lys Gly Arg				
275	280	285		
gtc cct gtg ttg tca tgg att cat ccg gaa agt caa gca acg att acc				1030
Val Pro Val Leu Ser Trp Ile His Pro Glu Ser Gln Ala Thr Ile Thr				
290	295	300		
cgt tgc agc cag cca ctt gtg ggt ccc aat gat aag cgc tgc aaa gag				1078
Arg Cys Ser Gln Pro Leu Val Gly Pro Asn Asp Lys Arg Cys Lys Glu				
305	310	315		
gat gaa aaa tac ttg caa aca ata atg gat gct aac gca cag tca cac				1126
Asp Glu Lys Tyr Leu Gln Thr Ile Met Asp Ala Asn Ala Gln Ser His				
320	325	330	335	
aag ctt atc atc ttt gat gct cga caa aac agt gtc gct gat acc aac				1174

Lys Leu Ile Ile Phe Asp Ala Arg Gln Asn Ser Val Ala Asp Thr Asn			
340	345	350	
aag aca aag ggt gga gga tat gaa agt gaa agt gct tac cca aat gca			1222
Lys Thr Lys Gly Gly Tyr Glu Ser Glu Ser Ala Tyr Pro Asn Ala			
355	360	365	
gaa ctt gtg ttc ttg gag atc cac att cat gtc atg cga gag tca			1270
Glu Leu Val Phe Leu Glu Ile His Asn Ile His Val Met Arg Glu Ser			
370	375	380	
cta cgc aaa tta aaa gag att gtg tac cct tcg atc gat gag gcg cgg			1318
Leu Arg Lys Leu Lys Glu Ile Val Tyr Pro Ser Ile Asp Glu Ala Arg			
385	390	395	
tgg ctc tcc aat gtg gat ggg acg cat tgg ctg gaa tat ata agg atg			1366
Trp Leu Ser Asn Val Asp Gly Thr His Trp Leu Glu Tyr Ile Arg Met			
400	405	410	415
ctg ctt gct ggg gca gta aga att gct gat aaa ata gaa tct ggg aaa			1414
Leu Leu Ala Gly Ala Val Arg Ile Ala Asp Lys Ile Glu Ser Gly Lys			
420	425	430	
aca tct gtg gtg gtg cat tgc agc gac ggt tgg gac cga aca gcc cag			1462
Thr Ser Val Val His Cys Ser Asp Gly Trp Asp Arg Thr Ala Gln			
435	440	445	
ctc aca tct ctg gct atg cta atg ttg gac agt tac tac agg acc att			1510
Leu Thr Ser Leu Ala Met Leu Met Leu Asp Ser Tyr Tyr Arg Thr Ile			
450	455	460	
aaa gga ttt gaa act ctc gta gaa aag gag tgg ata agc ttt gga cac			1558
Lys Gly Phe Glu Thr Leu Val Glu Lys Glu Trp Ile Ser Phe Gly His			
465	470	475	
agg ttt gca ctg cga gtg ggc cat ggt aat gac aac cat gcg gat gct			1606
Arg Phe Ala Leu Arg Val Gly His Gly Asn Asp Asn His Ala Asp Ala			
480	485	490	495
gac cga tct ccc ata ttt ctg cag ttt gtt gat tgt gtt tgg caa atg			1654
Asp Arg Ser Pro Ile Phe Leu Gln Phe Val Asp Cys Val Trp Gln Met			
500	505	510	
aca agg cag ttt cct tca gca ttc gag ttt aat gag cta ttc ttg att			1702
Thr Arg Gln Phe Pro Ser Ala Phe Glu Phe Asn Glu Leu Phe Leu Ile			
515	520	525	
aca att ttg gat cac ctt tat agc tgt ctt ttt ggg acc ttt ttg tgc			1750
Thr Ile Leu Asp His Leu Tyr Ser Cys Leu Phe Gly Thr Phe Leu Cys			
530	535	540	
aac tgt gaa cag cag cga ttc aaa gag gat gta tat aca aag acg ata			1798
Asn Cys Glu Gln Gln Arg Phe Lys Glu Asp Val Tyr Thr Lys Thr Ile			
545	550	555	
tct tta tgg tcg tat atc aat agc cag cta gac gag ttt tct aat ccc			1846
Ser Leu Trp Ser Tyr Ile Asn Ser Gln Leu Asp Glu Phe Ser Asn Pro			
560	565	570	575
ttc ttt gtg aat tat gaa aac cac gtg tta tat cct gtt gct agt ctg			1894
Phe Phe Val Asn Tyr Glu Asn His Val Leu Tyr Pro Val Ala Ser Leu			
580	585	590	
agt cat ttg gaa ttg tgg gta aat tat tat gta cga tgg aat cca cgg			1942

Ser His Leu Glu Leu Trp Val Asn Tyr Tyr Val Arg Trp Asn Pro Arg			
595	600	605	
atg aga cct cag atg ccc att cac cag aat ctc aag gag ctg ctg gcc		1990	
Met Arg Pro Gln Met Pro Ile His Gln Asn Leu Lys Glu Leu Leu Ala			
610	615	620	
gtc agg gcg gag ctg cag aag cgt gtg gag ggc cta cag cgg gag gtg		2038	
Val Arg Ala Glu Leu Gln Lys Arg Val Glu Gly Leu Gln Arg Glu Val			
625	630	635	
gcc acg cgc gcc gtc tca tcc tca tct gag cgg ggc tcc tcg ccc tcc		2086	
Ala Thr Arg Ala Val Ser Ser Ser Ser Glu Arg Gly Ser Ser Pro Ser			
640	645	650	655
cac tcc gcc acc tcc gtc cac acc tcg gtc tga tggcgag aaatatgtaa		2137	
His Ser Ala Thr Ser Val His Thr Ser Val *			
660	665		
tccccctggct gactaggact gttaaacata gtgtggactg gatgatgcct tcgacaaacc		2197	
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cactgttattt caatcatctg taattaaaat gatcatatgt ttgcctccctg gtctttta		2557	
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<210> 555  
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<220>  
<221> CDS  
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accggatgta agaacccaaac actttcctgc ctcttaatgc aacccaaagaa agctttaggag 180  
gcatcgTTT ttgttttgat cgctgaatac tgaattcctg ctttcctccc tagttcacgt 240



Arg Gln Ile Met Lys Met Arg Pro Lys Asp Leu Lys Lys Arg Leu Met			
215	220	225	
gtg aaa ttc cgt ggg gaa gaa ggt ttg gat tac ggt ggt gtg gcc agg			1194
Val Lys Phe Arg Gly Glu Gly Leu Asp Tyr Gly Gly Val Ala Arg			
230	235	240	
gag tgg ctt tac ttg ctg tgc cat gaa atg ctg aat cct tat tac ggg			1242
Glu Trp Leu Tyr Leu Leu Cys His Glu Met Leu Asn Pro Tyr Tyr Gly			
245	250	255	260
ctc ttc cag tat tct acg gac aat att tac atg ttg caa ata aat ccg			1290
Leu Phe Gln Tyr Ser Thr Asp Asn Ile Tyr Met Leu Gln Ile Asn Pro			
265	270	275	
gat tct tca atc aac ccc gac cac ttg tct tat ttc cac ttt gtg ggg			1338
Asp Ser Ser Ile Asn Pro Asp His Leu Ser Tyr Phe His Phe Val Gly			
280	285	290	
cgg atc atg ggg ctg ggc tgt gtt cca tgg aca cta cat caa cgg ggg			1386
Arg Ile Met Gly Leu Gly Cys Val Pro Trp Thr Leu His Gln Arg Gly			
295	300	305	
ctt cac agt gcc ctt cta caa gca gct gct ggg gaa gcc cat cca gct			1434
Leu His Ser Ala Leu Leu Gln Ala Ala Ala Gly Glu Ala His Pro Ala			
310	315	320	
ctc aga tct gga atc tgt gga ccc aga gct gca taa gagc ttggtgtgaa			1484
Leu Arg Ser Gly Ile Cys Gly Pro Arg Ala Ala *			
325	330	335	
tccttagagaa cgacatcacg cctgtactgg accacacctt ctgcgtggaa cacaacgcct			1544
tccggcggtat cctgcagcat gaactgaaac ccaatggca gaaaatgtgcc agtcacagag			1604
gagaataaga aagaataacgt ccgggtgtat gtaaaactgga ggtttatgag aggaatcgaa			1664
gcccagttct tagctctgca gaagggttca aatgagctca tccctcaaca tctgctgaag			1724
ccttttgacc agaaggaact ggagctgate ataggcggcc tggataaaat agacttgaac			1784
gactggaagt cgaacacgacg gctgaagcac tgtgtggccg acagcaacat cgtgcgggtgg			1844
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gcagggcccc ggctgttcac catccacctg atagacgcga acacagacaa cttccgaag			2024
gcccataacct gctttaaccg gatgacatt ccaccaatg agtcctatga gaagctctac			2084
gagaagctgc tgacagccgt ggaggagacc tgcgggttg ctgtggagtg aaaagcaacc			2144
aaaggcaaca gagtcttagct catgccacc agacaaaaag catccagctt ctgtgcaccc			2204
cctgcaaagc tggcagaggc cctgaaattc cagatcacct gaggggaaag gttgtctct			2264
ctcccttctg ttgggggagg gggatgggg acttttggtg gtggctccca cccatatata			2324
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tttagccctt ggctttggtc acacagg			2411

<210> 556  
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<220>  
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 <222> (183) .. (6386)

<400> 556

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caacctgcct	agacacactc	agaaccagg	ttaagaagat	cattcccatc	ccagagcaga	180
gc	atg gtt cag atg gtg tgc cac ctt ctg gaa tgc ctc ctg acc acg					227
	Met Val Gln Met Val Cys His Leu Leu Glu Cys Leu Leu Thr Thr					
1	5	10	15			
gag gac atc cct gca gac tgc cct aag gaa att tat gag cat tat ttt						275
Glu Asp Ile Pro Ala Asp Cys Pro Lys Glu Ile Tyr Glu His Tyr Phe						
20	25	30				
gtg ttt gct gcc atc tgg gct ttc ggc gga gca atg gtc caa gat cag						323
Val Phe Ala Ala Ile Trp Ala Phe Gly Gly Ala Met Val Gln Asp Gln						
35	40	45				
ctt gtg gac tac cgg gca gag ttc agc aaa tgg tgg ctg act gag ttc						371
Leu Val Asp Tyr Arg Ala Glu Phe Ser Lys Trp Trp Leu Thr Glu Phe						
50	55	60				
aaa aca gtc aag ttt cct tcc caa gga acc atc ttt gac tat tac atc						419
Lys Thr Val Lys Phe Pro Ser Gln Gly Thr Ile Phe Asp Tyr Tyr Ile						
65	70	75				
gac cca gag acc aag aaa ttc gag cct tgg tcc aag ctc gtc ccc cag						467
Asp Pro Glu Thr Lys Phe Glu Pro Trp Ser Lys Leu Val Pro Gln						
80	85	90	95			
ttc gaa ttt gac ccc gag atg ccc ttg cag gcg tgc ttg gtg cac acg						515
Phe Glu Phe Asp Pro Glu Met Pro Leu Gln Ala Cys Leu Val His Thr						
100	105	110				
agt gag acc atc cgt gtg tgc tac ttc atg gag cgg ttg atg gcg cgg						563
Ser Glu Thr Ile Arg Val Cys Tyr Phe Met Glu Arg Leu Met Ala Arg						
115	120	125				
cag cgg cct gtc atg ctg gtg ggc acg gct ggc act ggc aag tcg gtg						611
Gln Arg Pro Val Met Leu Val Gly Thr Ala Gly Thr Gly Lys Ser Val						
130	135	140				
ctg gtg gga gct aag ctg gcc agc ctt gac ccc gag gca tac ctg gtg						659
Leu Val Gly Ala Lys Leu Ala Ser Leu Asp Pro Glu Ala Tyr Leu Val						
145	150	155				
aaa aac gtg cca ttc aac tac tac acc acg tca gca atg ctg cag gct						707
Lys Asn Val Pro Phe Asn Tyr Tyr Thr Ser Ala Met Leu Gln Ala						
160	165	170	175			
gtc ctg gag aag cct ctg gaa aag aag gct ggc aga aac tat ggc cct						755
Val Leu Glu Lys Pro Leu Glu Lys Ala Gly Arg Asn Tyr Gly Pro						

180	185	190	
cca ggg aac aag aaa ctc atc tat ttc att gat gac atg aac atg cct Pro Gly Asn Lys Lys Leu Ile Tyr Phe Ile Asp Asp Met Asn Met Pro			803
195	200	205	
gag gtg gat gcc tac ggg acg gtg cag ccc cac acc atc atc cgg cag Glu Val Asp Ala Tyr Gly Thr Val Gln Pro His Thr Ile Ile Arg Gln			851
210	215	220	
cat ctg gac tat ggc cac tgg tat gat cgg agc aag ctg tcc cta aag His Leu Asp Tyr Gly His Trp Tyr Asp Arg Ser Lys Leu Ser Leu Lys			899
225	230	235	
gag atc aca aat gta cag tat gtt tcc tgt atg aac ccc acg gca ggc Glu Ile Thr Asn Val Gln Tyr Val Ser Cys Met Asn Pro Thr Ala Gly			947
240	245	250	255
agc ttc acc atc aac ccc cgg ctt cag cgt cac ttc agc gtg ttt gtc Ser Phe Thr Ile Asn Pro Arg Leu Gln Arg His Phe Ser Val Phe Val			995
260	265	270	
ctc tcc ttc ccg ggg gca gat gcc ctg tcc tct atc tac agc atc atc Leu Ser Phe Pro Gly Ala Asp Ala Leu Ser Ser Ile Tyr Ser Ile Ile			1043
275	280	285	
ctc act cag cat ctg aag ctc gga aac ttc ccg gcg tcc ctg cag aaa Leu Thr Gln His Leu Lys Leu Gly Asn Phe Pro Ala Ser Leu Gln Lys			1091
290	295	300	
tcc atc ccc cca ctg atc gat ctg gcc ctc gcc ttc cac cag aaa att Ser Ile Pro Pro Leu Ile Asp Leu Ala Leu Ala Phe His Gln Lys Ile			1139
305	310	315	
gct acc acc ttc cta ccc aca gga atc aaa ttc cac tac atc ttc aac Ala Thr Thr Phe Leu Pro Thr Gly Ile Lys Phe His Tyr Ile Phe Asn			1187
320	325	330	335
ctc aga gat ttt gcc aac att ttc cag ggc att ctc ttc tcc tca gtg Leu Arg Asp Phe Ala Asn Ile Phe Gln Gly Ile Leu Phe Ser Ser Val			1235
340	345	350	
gaa tgt gtg aaa tcc aca tgg gat ctt ata agg ctc tat ctg cat gaa Glu Cys Val Lys Ser Thr Trp Asp Leu Ile Arg Leu Tyr Leu His Glu			1283
355	360	365	
tca aat cga gtt tat cgg gat aag atg gta gaa gaa aag gac ttt gat Ser Asn Arg Val Tyr Arg Asp Lys Met Val Glu Glu Lys Asp Phe Asp			1331
370	375	380	
ctt ttt gat aaa atc cag aca gaa gtg ctc aag aaa act ttt gat gat Leu Phe Asp Lys Ile Gln Thr Glu Val Leu Lys Lys Thr Phe Asp Asp			1379
385	390	395	
att gaa gac cct gtg gag cag acc caa agc ccg aac ctg tat tgt cac Ile Glu Asp Pro Val Glu Gln Thr Gln Ser Pro Asn Leu Tyr Cys His			1427
400	405	410	415
ttt gca aat ggt att ggg gag ccc aaa tac atg cct gta cag tct tgg Phe Ala Asn Gly Ile Gly Glu Pro Lys Tyr Met Pro Val Gln Ser Trp			1475
420	425	430	
gaa ctt ttg acc cag act ctg gtg gag gcc ttg gag aac cac aat gaa Glu Leu Leu Thr Gln Thr Leu Val Glu Ala Leu Glu Asn His Asn Glu			1523

435

440

445

gtc aac aca gtg atg gac cta gtt ctc ttt gag gat gcc atg cgc cat Val Asn Thr Val Met Asp Leu Val Leu Phe Glu Asp Ala Met Arg His 450	455	460	1571
gtc tgc cat atc aat cgc atc ttg gag tcc ccg cg gaa aat gct ctg Val Cys His Ile Asn Arg Ile Leu Glu Ser Pro Arg Gly Asn Ala Leu 465	470	475	1619
ctg gtt ggt gta ggt ggg agc ggc aag cag agc ctg aca agg ctg gca Leu Val Gly Val Gly Ser Gly Lys Gln Ser Leu Thr Arg Leu Ala 480	485	490	1667
gct ttc atc agc tcc atg gat gtc ttc cag atc aca ctg cgc aaa ggc Ala Phe Ile Ser Ser Met Asp Val Phe Gln Ile Thr Leu Arg Lys Gly 500	505	510	1715
tac cag atc cag gac ttc aag atg gac ctg gcc agc ctg tgt ctg aaa Tyr Gln Ile Gln Asp Phe Lys Met Asp Leu Ala Ser Leu Cys Leu Lys 515	520	525	1763
gct gga gtg aag aat ctc aac aca gtg ttt ctc atg act gat gcc caa Ala Gly Val Lys Asn Leu Asn Thr Val Phe Leu Met Thr Asp Ala Gln 530	535	540	1811
gtg gct gat gag agg ttc ctt gtg ctc atc aat gat ctt ttg gca tct Val Ala Asp Glu Arg Phe Leu Val Leu Ile Asn Asp Leu Leu Ala Ser 545	550	555	1859
ggg gag atc cca gat ctc tac tct gat gat gaa gtt gaa aac atc ata Gly Glu Ile Pro Asp Leu Tyr Ser Asp Asp Glu Val Glu Asn Ile Ile 560	565	570	1907
agc aat gtg agg aat gaa gtc aag agc cag ggt ctg gtt gac aac aga Ser Asn Val Arg Asn Glu Val Lys Ser Gln Gly Leu Val Asp Asn Arg 580	585	590	1955
gag aac tgt tgg aag ttc ttt ata gat cgg atc cgg cga cag ctg aag Glu Asn Cys Trp Lys Phe Phe Ile Asp Arg Ile Arg Arg Gln Leu Lys 595	600	605	2003
gtg act ctc tgt ttc tcc cct gtg gga aac aag cta aga gtc cgc agc Val Thr Leu Cys Phe Ser Pro Val Gly Asn Lys Leu Arg Val Arg Ser 610	615	620	2051
agg aag ttc cca gcc att gtg aac tgc aca gcc atc cac tgg ttc cac Arg Lys Phe Pro Ala Ile Val Asn Cys Thr Ala Ile His Trp Phe His 625	630	635	2099
gag tgg cct cag caa gca ttg gag tct gtc agc ctc cgc ttc ttg cag Glu Trp Pro Gln Gln Ala Leu Glu Ser Val Ser Leu Arg Phe Leu Gln 640	645	650	2147
aac aca gag ggc att gag ccc aca gta aag cag tcg att agc aaa ttc Asn Thr Glu Gly Ile Glu Pro Thr Val Lys Gln Ser Ile Ser Lys Phe 660	665	670	2195
atg gcc ttt gtc cac aca agt gtc aac caa aca tcc cag tct tat ctg Met Ala Phe Val His Thr Ser Val Asn Gln Thr Ser Gln Ser Tyr Leu 675	680	685	2243
agc aat gaa cag cgc tac aac tat aca act ccc aag tcc ttt ctg gag Ser Asn Glu Gln Arg Tyr Asn Tyr Thr Pro Lys Ser Phe Leu Glu			2291

690	695	700	
ttc atc aga ctc tac cag agc ttg cac agg cac aga aaa gag ctc Phe Ile Arg Leu Tyr Gln Ser Leu Leu His Arg His Arg Lys Glu Leu 705 710 715			2339
aag tgc aag aca gag cgg ttg gag aac ggg ctg ctg aag ctg cat agc Lys Cys Lys Thr Glu Arg Leu Glu Asn Gly Leu Leu Lys Leu His Ser 720 725 730 735			2387
acc tct gcc cag gtg gat gat ctg aaa gca aag ctg gct gcc cag gaa Thr Ser Ala Gln Val Asp Asp Leu Lys Ala Lys Leu Ala Ala Gln Glu 740 745 750			2435
gta gag ctg aag cag aaa aat gaa gat gca gac aaa ctg att cag gtc Val Glu Leu Lys Gln Lys Asn Glu Asp Ala Asp Lys Leu Ile Gln Val 755 760 765			2483
gtg ggt gtg gag act gac aaa gtg agc aga gag aaa gcc atg gca gat Val Gly Val Glu Thr Asp Lys Val Ser Arg Glu Lys Ala Met Ala Asp 770 775 780			2531
gaa gag gag cag aag gtg gcc gtc atc atg cta gag gtg aaa cag aag Glu Glu Glu Gln Lys Val Ala Val Met Leu Glu Val Lys Gln Lys 785 790 795			2579
cag aag gac tgt gag gag gac ctg gca aag gct gag cca gca ctc aca Gln Lys Asp Cys Glu Asp Leu Ala Lys Ala Glu Pro Ala Leu Thr 800 805 810 815			2627
gca gcg cag gca gct ctc aac acc ctg aac aag acc aac ctg aca gag Ala Ala Gln Ala Ala Leu Asn Thr Leu Asn Lys Thr Asn Leu Thr Glu 820 825 830			2675
ctg aag tca ttt ggc tct ccg cct ctg gcc gtc agc aat gtc agc gct Leu Lys Ser Phe Gly Ser Pro Pro Leu Ala Val Ser Asn Val Ser Ala 835 840 845			2723
gcg gtg atg gta ctg atg gct ccc agg ggt agg gtg ccc aag gac cgg Ala Val Met Val Leu Met Ala Pro Arg Gly Arg Val Pro Lys Asp Arg 850 855 860			2771
agc tgg aag gct aag gtc acc atg gcc aaa gtg gat ggc ttc ctg Ser Trp Lys Ala Ala Lys Val Thr Met Ala Lys Val Asp Gly Phe Leu 865 870 875			2819
gac tcg cta ata aac ttc aac aaa gag aac att cac gag aac tgc ctc Asp Ser Leu Ile Asn Phe Asn Lys Glu Asn Ile His Glu Asn Cys Leu 880 885 890 895			2867
aaa gcc atc agg ccg tat ctg caa gac ccg gag ttc aat cct gag ttt Lys Ala Ile Arg Pro Tyr Leu Gln Asp Pro Glu Phe Asn Pro Glu Phe 900 905 910			2915
gtg gcc acc aaa tcc tat gcg gct gca ggc ctc tgc tcc tgg gtc atc Val Ala Thr Lys Ser Tyr Ala Ala Gly Leu Cys Ser Trp Val Ile 915 920 925			2963
aat att gtg aga ttt tat gag gtg ttc tgt gat gtg gaa ccc aag cgc Asn Ile Val Arg Phe Tyr Glu Val Phe Cys Asp Val Glu Pro Lys Arg 930 935 940			3011
cag gca ctg aac aaa gcc acc gcg gac ctc aca gct gcc cag gag aag Gln Ala Leu Asn Lys Ala Thr Ala Asp Leu Thr Ala Ala Gln Glu Lys			3059

945	950	955	
ctg gct gcc atc aaa gcc aag atc gct cac ctt aat gaa aac ctg gca Leu Ala Ala Ile Lys Ala Lys Ile Ala His Leu Asn Glu Asn Leu Ala	960	965	3107
aag ctc aca gcc agg ttt gag aaa gca aca gca gac aaa ctc aaa tgt Lys Leu Thr Ala Arg Phe Glu Lys Ala Thr Ala Asp Lys Leu Lys Cys	980	985	3155
cag caa gaa gcc gaa gtg acc gca gtc acc atc tcc ctt gcc aac cgc Gln Gln Glu Ala Glu Val Thr Ala Val Thr Ile Ser Leu Ala Asn Arg	995	1000	3203
995	1000	1005	
ctg gtt gga gga ctc gct tct gaa aac gtg agg tgg gca gat gcc gtg Leu Val Gly Gly Leu Ala Ser Glu Asn Val Arg Trp Ala Asp Ala Val	1010	1015	3251
1010	1015	1020	
cag aac ttc aaa cag cag gaa agg acg tta tgt gga gac att tta ctt Gln Asn Phe Lys Gln Glu Arg Thr Leu Cys Gly Asp Ile Leu Leu	1025	1030	3299
1025	1030	1035	
ata acg gct ttc att tcc tac ctt ggc ttc ttc aca aag aaa tac cgg Ile Thr Ala Phe Ile Ser Tyr Leu Gly Phe Thr Lys Lys Tyr Arg	1040	1045	3347
1040	1045	1050	1055
cag agc ctc ctg gac aga act tgg agg ccc tac ctg agc cag ctg aaa Gln Ser Leu Leu Asp Arg Thr Trp Arg Pro Tyr Leu Ser Gln Leu Lys	1060	1065	3395
1060	1065	1070	
act ccc att cca gtc acc cca gcc ctg gat ccc ctg agg atg ctg atg Thr Pro Ile Pro Val Thr Pro Ala Leu Asp Pro Leu Arg Met Leu Met	1075	1080	3443
1075	1080	1085	
gat gat gct gac gtg gct gcc tgg cag aac gag ggc ctc cca gcc gac Asp Asp Ala Asp Val Ala Ala Trp Gln Asn Glu Gly Leu Pro Ala Asp	1090	1095	3491
1090	1095	1100	
cgc atg tcc gtg gag aat gcc acc att ctc atc aac tgt gag cgc tgg Arg Met Ser Val Glu Asn Ala Thr Ile Leu Ile Asn Cys Glu Arg Trp	1105	1110	3539
1105	1110	1115	
cca ctc atg gtt gac cct cag cta caa ggc atc aaa tgg atc aag aat Pro Leu Met Val Asp Pro Gln Leu Gln Gly Ile Lys Trp Ile Lys Asn	1120	1125	3587
1120	1125	1130	1135
aaa tat ggt gaa gat ctc cgg gtc acg cag att ggt cag aaa ggc tac Lys Tyr Gly Glu Asp Leu Arg Val Thr Gln Ile Gly Gln Lys Gly Tyr	1140	1145	3635
1140	1145	1150	
ctt caa atc ata gag cag gcc ctg gaa gct gga gct gtg gtg ctg att Leu Gln Ile Glu Gln Ala Leu Glu Ala Gly Ala Val Val Leu Ile	1155	1160	3683
1155	1160	1165	
gaa aat cta gag gag tcc att gat cct gtt ctg gga ccc ctg ctt ggg Glu Asn Leu Glu Ser Ile Asp Pro Val Leu Gly Pro Leu Leu Gly	1170	1175	3731
1170	1175	1180	
aga gaa gtc att aaa aaa gga cga ttc att aaa att gga gac aaa gaa Arg Glu Val Ile Lys Lys Gly Arg Phe Ile Lys Ile Gly Asp Lys Glu	1185	1190	3779
1185	1190	1195	
tgt gaa tac aat ccc aag ttc cgg ctc atc ctc cac acc aag ctg gct Cys Glu Tyr Asn Pro Lys Phe Arg Leu Ile Leu His Thr Lys Leu Ala			3827

1200	1205	1210	1215	
aat cct cac tac cag cct gag ctg cag gct cag gcc acc ctg atc aac Asn Pro His Tyr Gln Pro Glu Leu Gln Ala Gln Ala Thr Leu Ile Asn				3875
1220	1225	1230		
tcc acc gtg acc agg gat ggc ctg gag cag ttg ctg gcc gct gtg Phe Thr Val Thr Arg Asp Gly Leu Glu Asp Gln Leu Leu Ala Ala Val				3923
1235	1240	1245		
gtc agc atg gag agg cca gac ttg gag cag ctg aag tcc gat ctc aca Val Ser Met Glu Arg Pro Asp Leu Glu Gln Leu Lys Ser Asp Leu Thr				3971
1250	1255	1260		
aag cag cag aat gga ttc aaa att acc ctg aaa acg ctg gaa gac agt Lys Gln Gln Asn Gly Phe Lys Ile Thr Leu Lys Thr Leu Glu Asp Ser				4019
1265	1270	1275		
ctt ctc tct cgc ctc tcc gcc tct ggg aac ttc ctg gga gaa aca Leu Leu Ser Arg Leu Ser Ser Ala Ser Gly Asn Phe Leu Gly Glu Thr				4067
1280	1285	1290	1295	
gtg ctg gtg gaa aac cta gag atc acc aag cag act gct gcc gaa gtt Val Leu Val Glu Asn Leu Glu Ile Thr Lys Gln Thr Ala Ala Glu-Val				4115
1300	1305	1310		
gag aaa aag gtc cag gag gcc aag gtg act gaa gtg aaa atc aac gag Glu Lys Lys Val Gln Glu Ala Lys Val Thr Glu Val Lys Ile Asn Glu				4163
1315	1320	1325		
gcc cga gag cac tac cgg cca gca gct gcc agg gcc tca ctg ctc tac Ala Arg Glu His Tyr Arg Pro Ala Ala Arg Ala Ser Leu Leu Tyr				4211
1330	1335	1340		
ttc atc atg aac gac ctc agc aag atc cat cca atg tac cag ttt tct Phe Ile Met Asn Asp Leu Ser Lys Ile His Pro Met Tyr Gln Phe Ser				4259
1345	1350	1355		
ctc aag gcc ttc agt atc gtc ttc cag aag gct gtg gag agg gct gct Leu Lys Ala Phe Ser Ile Val Phe Gln Lys Ala Val Glu Arg Ala Ala				4307
1360	1365	1370	1375	
cct gac gaa agc ctc agg gag cgg gtg gcc aac cta ata gac agc ata Pro Asp Glu Ser Leu Arg Glu Arg Val Ala Asn Leu Ile Asp Ser Ile				4355
1380	1385	1390		
acc ttc tct gtg tac cag tac acc atc cgc ggg ctc ttt gag tgt gat Thr Phe Ser Val Tyr Gin Tyr Ile Arg Gly Leu Phe Glu Cys Asp				4403
1395	1400	1405		
aag ctg acc tac ctt gcc cag ctc acc ttt cag att ctc ctc atg aac Lys Leu Thr Tyr Leu Ala Gln Leu Thr Phe Gln Ile Leu Leu Met Asn				4451
1410	1415	1420		
cga gaa gtc aat gca gtg gag ttg gat ttc ctg ctt cga tct cca gtg Arg Glu Val Asn Ala Val Glu Leu Asp Phe Leu Leu Arg Ser Pro Val				4499
1425	1430	1435		
cag acg ggc acc gcc agc ccc gtg gag ttc ctc tcc cat cag gcg tgg Gln Thr Gly Thr Ala Ser Pro Val Glu Phe Leu Ser His Gln Ala Trp				4547
1440	1445	1450	1455	
gga gct gtc aag gta ctt tca tca atg gaa gaa ttc tct aat ctg gat Gly Ala Val Lys Val Leu Ser Ser Met Glu Glu Phe Ser Asn Leu Asp				4595

1460	1465	1470	
cgg gac ata gag gga tct gct aag agc tgg aaa aag ttt gtg gag tcc Arg Asp Ile Glu Gly Ser Ala Lys Ser Trp Lys Lys Phe Val Glu Ser	1475	1480	4643
gaa tgt cct gag aaa gag aag ctc cca cag gag tgg aag aac aag aca Glu Cys Pro Glu Lys Glu Lys Leu Pro Gln Glu Trp Lys Asn Lys Thr	1490	1495	4691
1500			
gcc ctg cag cgc ctc tgc atg ctg aga gcc atg cgg ccc gac cgg atg Ala Leu Gln Arg Leu Cys Met Leu Arg Ala Met Arg Pro Asp Arg Met	1505	1510	4739
acc tat gct ttg cga gat ttt gtt gaa gag aag tta gga agc aaa tac Thr Tyr Ala Leu Arg Asp Phe Val Glu Glu Lys Leu Gly Ser Lys Tyr	1520	1525	4787
1530			
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1730			

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cgg gac ata gag gga tct gct aag agc tgg aaa aag ttt gtc gag tcc Arg Asp Ile Glu Gly Ser Ala Lys Ser Trp Lys Phe Val Glu Ser 1475 1480 1485	4643
gaa tgt cct gag aaa gag aag ctc cca cag gag tgg aag aac aag aca Glu Cys Pro Glu Lys Glu Lys Leu Pro Gln Glu Trp Lys Phe Val Glu Ser 1490 1495 1500	4691
gcc ctg cag cgc ctc tgc atg ctg aga gcc atg cgg ccc gac cgg atg Ala Leu Gln Arg Leu Cys Met Leu Arg Ala Met Arg Pro Asp Arg Met 1505 1510 1515	4739
acc tat gct ttg cga gat ttt gtt gaa gag aag tta gga agc aaa tac Thr Tyr Ala Leu Arg Asp Phe Val Glu Glu Lys Leu Gly Ser Lys Tyr 1520 1525 1530 1535	4787
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cca gcc act cct atg ttt ttc atc ctg tct cca ggg gtg gac cca ctg Pro Ala Thr Pro Met Phe Phe Ile Leu Ser Pro Gly Val Asp Pro Leu 1555 1560 1565	4883
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cag aac att cac ctg gtg gcc aag tgg ctc agc acc ctg gag aag aag Gln Asn Ile Leu Val Ala Lys Trp Leu Ser Thr Leu Glu Lys Lys 1620 1625 1630	5075
ctg gag gag cac agt gag aac agc cac cca gag ttc agg gtc ttc atg Leu Glu Glu His Ser Glu Asn Ser His Pro Glu Phe Arg Val Phe Met 1635 1640 1645	5123
agt gca gag cca gca ccc tcc cct gag ggc cac atc atc ccc cag ggc Ser Ala Glu Pro Ala Pro Ser Pro Glu Gly His Ile Ile Pro Gln Gly 1650 1655 1660	5171
atc ctg gag aac tcc att aag atc acc aat gag ccc ccc acg ggc atg Ile Leu Glu Asn Ser Ile Lys Ile Thr Asn Glu Pro Pro Thr Gly Met 1665 1670 1675	5219
cat gcc aac ctg cac aag gcc ctg gac aac ttc act cag gac act ctg His Ala Asn Leu His Lys Ala Leu Asp Asn Phe Thr Gln Asp Thr Leu 1680 1685 1690 1695	5267
gag atg tgt tct cgg gag acg gag ttt aag agc atc ctc ttt gct ctt Glu Met Cys Ser Arg Glu Thr Glu Phe Lys Ser Ile Leu Phe Ala Leu 1700 1705 1710	5315
tgt tac ttc cat gcg gtg gca gaa aga cga aaa ttt ggg ccc cag Cys Tyr Phe His Ala Val Val Ala Glu Arg Arg Lys Phe Gly Pro Gln 1715 1720 1725	5363
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gca gag att ggc ttc ctg acc caa acc tca gaa aag ctc ttc cgc act Ala Glu Ile Gly Phe Leu Thr Gln Thr Ser Glu Lys Leu Phe Arg Thr 1840 1845 1850 1855	5747
gtg ctg gag ctg cag cct cgg gac agc cag gcc aga gac gga gcg ggc Val Leu Glu Leu Gln Pro Arg Asp Ser Gln Ala Arg Asp Gly Ala Gly 1860 1865 1870	5795
gcc aca aga gaa gaa aag gtc aag gca ctt ctg gaa gaa ata ttg gag Ala Thr Arg Glu Glu Lys Val Lys Ala Leu Leu Glu Glu Ile Leu Glu 1875 1880 1885	5843
cgg gtg aca gac gag ttt aac atc cca gaa ctg atg gcc aaa gtg gag Arg Val Thr Asp Glu Phe Asn Ile Pro Glu Leu Met Ala Lys Val Glu 1890 1895 1900	5891
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gcc ctg caa tgt gac atg acg aag aac aga gaa gag ttt agg agt Ala Leu Gln Cys Asp Met Thr Lys Lys Asn Arg Glu Glu Phe Arg Ser 2035 2040 2045	6323
cct cct cgg gaa ggg gcc tac atc cat ggc ctc ttc atg gaa ggt gcc Pro Pro Arg Glu Gly Ala Tyr Ile His Gly Leu Phe Met Glu Gly Ala 2050 2055 2060	6371

tgc tgg gac aca cag gct ggg atc att aca gag gca aag ctg aag gat Cys Trp Asp Thr Gln Ala Gly Ile Ile Thr Glu Ala Lys Leu Lys Asp 2065 2070 2075	6419
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cag cgg gga ccc acc tac gtg tgg act ttc aac ctg aag act aag gaa Gln Arg Gly Pro Thr Tyr Val Trp Thr Phe Asn Leu Lys Thr Lys Glu 2115 2120 2125	6563
aac cca tcc aag tgg gtt ctg gct gga gta gcc ttg ctt ctc cag att Asn Pro Ser Lys Trp Val Leu Ala Gly Val Ala Leu Leu Leu Gln Ile 2130 2135 2140	6611
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15 20 25 30	
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35 40 45	
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65 70 75	
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80 85 90	
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95 100 105 110	
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115 120 125	
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130 135 140	
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145 150 155	
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160 165 170	
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175 180 185 190	
cat gta gca gtt aca aat atg aat gaa cat agc tct agg agt cac agt His Val Ala Val Thr Asn Met Asn Glu His Ser Ser Arg Ser His Ser	1045
195 200 205	
ata ttt ctt att aat gtc aaa caa gag aac aca caa acg gaa caa aag Ile Phe Leu Ile Asn Val Lys Gln Glu Asn Thr Gln Thr Glu Gln Lys	1093
210 215 220	
ctg agt gga aaa ctt tat ctg gtt gat tta gct ggt agt gaa aag gtt Leu Ser Gly Lys Leu Tyr Leu Val Asp Leu Ala Gly Ser Glu Lys Val	1141
225 230 235	
agt aaa act gga gct gaa ggt gct gtg ctg gat gaa gct aaa aac atc Ser Lys Thr Gly Ala Glu Gly Ala Val Leu Asp Glu Ala Lys Asn Ile	1189

240	245	250	
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ggt agt aca tat gtt cca tat cga gat agt aaa atg aca aga atc ctt Gly Ser Thr Tyr Val Pro Tyr Arg Asp Ser Lys Met Thr Arg Ile Leu 275	280	285	1285
caa gat tca tta ggt ggc aac tgt aga acc act att gta att tgc tgc Gln Asp Ser Leu Gly Gly Asn Cys Arg Thr Thr Ile Val Ile Cys Cys 290	295	300	1333
tct cca tca tca tac aat gag tct gaa aca aaa tct aca ctc tta ttt Ser Pro Ser Ser Tyr Asn Glu Ser Glu Thr Lys Ser Thr Leu Leu Phe 305	310	315	1381
ggc caa agg gcc aaa aca att aag aac aca gtt tgt gtc aat gtg gag Gly Gln Arg Ala Lys Thr Ile Lys Asn Thr Val Cys Val Asn Val Glu 320	325	330	1429
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gat gct gaa aga aga aag tgt gaa gaa att gct aaa tta tac aaa Asp Ala Glu Arg Arg Lys Cys Glu Glu Ile Ala Lys Leu Tyr Lys 415	420	425	1717
cag ctt gat gac aag gat gaa gaa att aac cag caa agt caa ctg gta Gln Leu Asp Asp Lys Asp Glu Glu Ile Asn Gln Gln Ser Gln Leu Val 435	440	445	1765
gag aaa ctg aag acg caa atg ttg gat cag gag gag ctt ttg gca tct Glu Lys Leu Lys Thr Gln Met Leu Asp Gln Glu Glu Leu Leu Ala Ser 450	455	460	1813
acc aga agg gat caa gac aat atg caa gct gag ctg aat cgc ctt caa Thr Arg Arg Asp Gln Asp Asn Met Gln Ala Glu Leu Asn Arg Leu Gln 465	470	475	1861
gca gaa aat gat gcc tct aaa gaa gaa gtg aaa gaa gtt tta cag gcc Ala Glu Asn Asp Ala Ser Lys Glu Glu Val Lys Glu Val Leu Gln Ala 480	485	490	1909
cta gaa gaa ctt gct gtc aat tat gat cag aag tct cag gaa gtt gaa Leu Glu Glu Leu Ala Val Asn Tyr Asp Gln Lys Ser Gln Glu Val Glu 495			1957

495	500	505	510	
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tcg gca act tta gcg agt ata gat gct gag ctt cag aaa ctt aag gaa Ser Ala Thr Leu Ala Ser Ile Asp Ala Glu Leu Gln Lys Leu Lys Glu 530 535 540				2053
atg acc aac cac cag aaa aaa cga gca gct gag atg atg gca tct tta Met Thr Asn His Gln Lys Lys Arg Ala Ala Glu Met Met Ala Ser Leu 545 550 555				2101
cta aaa gac ctt gca gaa ata gga att gct gtg gga aat aat gat gta Leu Lys Asp Leu Ala Glu Ile Gly Ile Ala Val Gly Asn Asn Asp Val 560 565 570				2149
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gaa gaa aat gaa aag gag tta gca gca tgt cag ctt cgt atc tct caa Glu Glu Asn Glu Lys Glu Leu Ala Ala Cys Gln Leu Arg Ile Ser Gln 625 630 635				2341
cat gaa gcc aaa atc aag tca ttg act gaa tac ctt caa aat gtg gaa His Glu Ala Lys Ile Lys Ser Leu Thr Glu Tyr Leu Gln Asn Val Glu 640 645 650				2389
caa aag aaa aga cag ttg gag gaa tct gtc gat gcc ctc agt gaa gaa Gln Lys Lys Arg Gln Leu Glu Ser Val Asp Ala Leu Ser Glu Glu 655 660 665 670				2437
cta gtc cag ctt cga gca caa gag aaa gtc cat gaa atg gaa aag gag Leu Val Gln Leu Arg Ala Gln Glu Lys Val His Glu Met Glu Lys Glu 675 680 685				2485
cac tta aat aag gtt cag act gca aat gaa gtt aag caa gct gtt gaa His Leu Asn Lys Val Gln Thr Ala Asn Glu Val Lys Gln Ala Val Glu 690 695 700				2533
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cat gag aag ttg aaa gcc aca gat cag gaa aag agc aga aaa cta cat His Glu Lys Leu Lys Ala Thr Asp Gln Glu Lys Ser Arg Lys Leu His				2725

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770	775	780	
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785	790	795	
ctg cgc aaa ctc ttt gtt cag gac ctg gct aca aga gtt aaa aag agt Leu Arg Lys Leu Phe Val Gln Asp Leu Ala Thr Arg Val Lys Lys Ser			2869
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815	820	825	830
aaa atc tcc ttt ctt gaa aat aat ctt gaa cag ctc act aaa gtg cac Lys Ile Ser Phe Leu Glu Asn Asn Leu Glu Gln Leu Thr Lys Val His			2965
835	840	845	
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850	855	860	
ttg gaa aag cga ctt cga gct aca gct gag aga gtg aaa gct ttg gaa Leu Glu Lys Arg Leu Arg Ala Thr Ala Glu Arg Val Lys Ala Leu Glu			3061
865	870	875	
tca gca ctg aaa gaa gct aaa gaa aat gca tct cgt gat cgc aaa cgc Ser Ala Leu Lys Glu Ala Lys Glu Asn Ala Ser Arg Asp Arg Lys Arg			3109
880	885	890	
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895	900	905	910
atg gcc aga aga ggg cat tct gca cag att gct aaa cct att cgt ccc Met Ala Arg Arg. Gly His Ser Ala Gln Ile Ala Lys Pro Ile Arg Pro			3205
915	920	925	
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930	935	940	
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Leu	Pro	Lys	Met	Pro	Trp	Ala	Met	Val	Trp	Asp	Phe	Ser	Glu	Ala	Val		96
								25					30				
20																	

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Cys	Arg	Gly	Cys	Val	Asn	Phe	Glu	Gly	Ala	Asp	Arg	Ile	Glu	Leu	Leu		144
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Ile	Asp	Ala	Ala	Arg	Gln	Leu	Lys	Arg	Ser	His	Val	Leu	Pro	Glu	Gly		192
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cgc tcg ccc ggg ccc ccg gcc ctt aag cac ccg gcc acc aag gac ctg

Arg	Ser	Pro	Gly	Pro	Pro	Ala	Leu	Lys	His	Pro	Ala	Thr	Lys	Asp	Leu		240
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gct gct gca gca cag ggg ccc cag ctg ccg ccc ccg cag gcc cag

Ala	Ala	Ala	Ala	Gln	Gly	Pro	Gln	Leu	Pro	Pro	Pro	Gln	Ala	Gln			288
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ccc cag ccg tca ggg acc ggc ggc gtg tcg ggc cag gac cgc tat

Pro	Gln	Pro	Ser	Gly	Thr	Gly	Gly	Val	Ser	Gly	Gln	Asp	Arg	Tyr		336	
								100			105		110				

gac agg gcc aca tca tca ggc cgc ctc ccc ctg ccc tcg ccc gcc ctg

Asp	Arg	Ala	Thr	Ser	Ser	Gly	Arg	Leu	Pro	Leu	Pro	Ser	Pro	Ala	Leu		384
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Glu	Tyr	Thr	Leu	Gly	Ser	Arg	Leu	Ala	Asn	Gly	Leu	Gly	Arg	Glu	Glu		432
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Ala	Val	Ala	Glu	Gly	Ala	Arg	Arg	Ala	Leu	Leu	Gly	Ser	Met	Pro	Gly		480
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Leu	Met	Pro	Pro	Gly	Leu	Leu	Ala	Ala	Ala	Val	Ser	Gly	Leu	Gly	Ser		528
										165		170		175			

cga ggc ctg acg ctg gca ccc ggc ttg agt cct gcc cgt ccc ctc ttc

Arg	Gly	Leu	Thr	Leu	Ala	Pro	Gly	Leu	Ser	Pro	Ala	Arg	Pro	Leu	Phe		576
											180		185		190		

ggc tcc gat ttc gag aaa gag aag cag cag agg aat gct gac tgc tct

Gly	Ser	Asp	Phe	Glu	Lys	Glu	Lys	Gln	Gln	Arg	Asn	Ala	Asp	Cys	Leu		624
											195		200		205		

gca gaa ctg aac gag gcc atg cga ggc cgg gca gag gaa tgg cac ggg

Ala	Glu	Leu	Asn	Glu	Ala	Met	Arg	Gly	Arg	Ala	Glu	Glu	Trp	His	Gly		672
											210		215		220		

cgc ccc aaa gca gtg cgg gaa cag cta ctg gct ctg tcc gcc tgc gcc

																720
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-----

Arg Pro Lys Ala Val Arg Glu Gln Leu Leu Ala Leu Ser Ala Cys Ala			
225	230	235	240
ccg ttc aat gtg cgc ttc aag aag gat cac ggg ctg gtg ggg cga gtg Pro Phe Asn Val Arg Phe Lys Lys Asp His Gly Leu Val Gly Arg Val			768
245	250	255	
ttc gcc ttc gat gct act gcc cgt cct cca gga tac gag ttc gag ctg Phe Ala Phe Asp Ala Thr Ala Arg Pro Pro Gly Tyr Glu Phe Glu Leu			816
260	265	270	
aag ctc ttc acc gaa tac ccc tgt ggt tcc ggc aat gtg tac gcc ggc Lys Leu Phe Thr Glu Tyr Pro Cys Gly Ser Gly Asn Val Tyr Ala Gly			864
275	280	285	
gtc ctg gca gtg gct cgc cag atg ttc cac gat gct ctg cgg gag ccg Val Leu Ala Val Ala Arg Gln Met Phe His Asp Ala Leu Arg Glu Pro			912
290	295	300	
ggc aag gca ctg gct tct tcg ggc ttc aag tac ctc gaa tat gaa cgc Gly Lys Ala Leu Ala Ser Ser Gly Phe Lys Tyr Leu Glu Tyr Glu Arg			960
305	310	315	320
cgg cat gga tca gga gaa tgg cgg cag ctg ggc gag ctg ctt acc gac Arg His Gly Ser Gly Glu Trp Arg Gln Leu Gly Glu Leu Leu Thr Asp			1008
325	330	335	
ggc gtc cgc agc ttc cgc gag cca gct ccc gcg gag gcc ctg ccc cag Gly Val Arg Ser Phe Arg Glu Pro Ala Pro Ala Glu Ala Leu Pro Gln			1056
340	345	350	
cag tac cca gag ccg gcc cct gcg gct ctc tgt ggc cca ccc ccg cga Gln Tyr Pro Glu Pro Ala Pro Ala Leu Cys Gly Pro Pro Pro Arg			1104
355	360	365	
gcc cca tcc cgg aac ctg gcg ccc acg ccg cgc cgt cgc aag gca tcc Ala Pro Ser Arg Asn Leu Ala Pro Thr Pro Arg Arg Arg Lys Ala Ser			1152
370	375	380	
ccc gag ccg gag ggc gag gcg gct ggg aag atg acc acc gag gag cag Pro Glu Pro Glu Gly Glu Ala Ala Gly Lys Met Thr Thr Glu Glu Gln			1200
385	390	395	400
cag caa ccg cac tgg gtg gca ccc ggc ggc ccg tac tcc gct gag acc Gln Gln Arg His Trp Val Ala Pro Gly Gly Pro Tyr Ser Ala Glu Thr			1248
405	410	415	
cct ggt gtg ccc tcg ccc att gcc gcc ctg aag aat gtg gcc gaa gcc Pro Gly Val Pro Ser Pro Ile Ala Ala Leu Lys Asn Val Ala Glu Ala			1296
420	425	430	
ctg ggc cac tca ccc aag gac cct ggc gga ggc ggg ggg cct gtg cgt Leu Gly His Ser Pro Lys Asp Pro Gly Gly Gly Gly Pro Val Arg			1344
435	440	445	
gca ggg ggc gcc agc cct gca gcc tcc acg gcc cag ccg cca acc Ala Gly Gly Ala Ser Pro Ala Ala Ser Ser Thr Ala Gln Pro Pro Thr			1392
450	455	460	
cag cat cgc ctt gtg gcc cgc aac ggc gaa gca gaa gtc agt ccc aca Gln His Arg Leu Val Ala Arg Asn Gly Glu Ala Glu Val Ser Pro Thr			1440
465	470	475	480
gcg ggg gcc gaa gct gtc agc ggg ggt ggc agc ggc act ggg gcg acc			1488

Ala Gly Ala Glu Ala Val Ser Gly Gly Gly Ser Gly Thr Gly Ala Thr		
485	490	495
cct ggg gcc ccc ctg tgc tgt acc ctg tgc agg gag cggtt cta gaa gac		1536
Pro Gly Ala Pro Leu Cys Cys Thr Leu Cys Arg Glu Arg Leu Glu Asp		
500	505	510
acc cac ttc gtc cag tgc ccc tcg gtg ccc gga cac aag ttc tgc ttt		1584
Thr His Phe Val Gln Cys Pro Ser Val Pro Gly His Lys Phe Cys Phe		
515	520	525
ccc tgc tcc cgg gag ttc atc aag gcg cag ggc ccg gcc ggg gag gtg		1632
Pro Cys Ser Arg Glu Phe Ile Lys Ala Gln Gly Pro Ala Gly Glu Val		
530	535	540
tac tgc ccg agc gga gac aag tgc ccg ctg gtc ggc tcc tcc gtg ccc		1680
Tyr Cys Pro Ser Gly Asp Lys Cys Pro Leu Val Gly Ser Ser Val Pro		
545	550	555
tgg gcc ttc atg cag ggc gag atc gcc acc atc ctt gct gga gac atc		1728
Trp Ala Phe Met Gln Gly Glu Ile Ala Thr Ile Leu Ala Gly Asp Ile		
565	570	575
aaa gtt aag aaa gaa cgg gac ccc tag gctac cactgcctcc aggctactgc		1780
Lys Val Lys Lys Glu Arg Asp Pro *		
580	585	
cctctgcccc tttgccaccc accgctgccc cggataaatt attccctccc cgaccaggcc		1840
cagtgccacc tctatctgtg tacatactcc cttcttccac ccagatgggt cccctggggt		1900
agatgcattt ggggtggggg gagaaagctt gtggctcctg tccgaggggg tgggggggt		1960
cccttggccc ctccagttt cctctgtcct cttggcttg gctttgtgc tgctttagt		2020
tgggggagag gtgccccctt cctcttgag aaggcaccc ctgaaaactc gctctttata		2080
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acatcggtca agtgactgtt ccagataatg agaaggaaag attatcaagc attgaaaaga	180
ttaaacagct aagagaacaa gttaatgacc tcttagccg aaaatttggt gaagcaattg	240
gcgtggattt ccctgtgaaa gttccctaca ggaagatcac attcaaccct ggctgtgtgg	300

tgattgatgg c atg ccc ccg ggg gtg gta ttc aag gcc ccc ggc tat ctg Met Pro Pro Gly Val Val Phe Lys Ala Pro Gly Tyr Leu	350
1 5 10	
gaa atc agt tcc atg agg agg atc ttg gag gca gct gag ttt atc aaa Glu Ile Ser Ser Met Arg Arg Ile Leu Glu Ala Ala Glu Phe Ile Lys	398
15 20 25	
ttc aca gtc atc agg ccg ctt cca ggg ctt gag ctc agt aat ggt gag Phe Thr Val Ile Arg Pro Leu Pro Gly Leu Glu Leu Ser Asn Gly Glu	446
30 35 40 45	
tat tct aca gtg gga aaa cgc aag ata gac cag gag ggc cgt gtg ttt Tyr Ser Thr Val Gly Lys Arg Lys Ile Asp Gln Glu Gly Arg Val Phe	494
50 55 60	
caa gaa aag tgg gag aga gcg tat ttc ttc gtg gaa gta cag aat att Gln Glu Lys Trp Glu Arg Ala Tyr Phe Phe Val Glu Val Gln Asn Ile	542
65 70 75	
cca aca tgt ctc ata tgc aaa caa agc atg tct gtg tcc aaa gaa tat Pro Thr Cys Leu Ile Cys Lys Gln Ser Met Ser Val Ser Lys Glu Tyr	590
80 85 90	
aac cta aga cgc cac tat caa acc aat cac agc aag cat tat gac cag Asn Leu Arg Arg His Tyr Gln Thr Asn His Ser Lys His Tyr Asp Gln	638
95 100 105	
tat atg gaa aga atg cgt gac gag aag ctt cac gag ctg aaa aaa ggg Tyr Met Glu Arg Met Arg Asp Glu Lys Leu His Glu Leu Lys Lys Gly	686
110 115 120 125	
ctc agg aag tat ctc tta ggc tcg tca gac acc gag tgt ccc gag caa Leu Arg Lys Tyr Leu Leu Gly Ser Ser Asp Thr Glu Cys Pro Glu Gln	734
130 135 140	
aaa caa gtg ttt gca aac cca agt cca acc cag aaa tcc ccc gtg cag Lys Gln Val Phe Ala Asn Pro Ser Pro Thr Gln Lys Ser Pro Val Gln	782
145 150 155	
cct gta gag gac cta gct ggg aac tta tgg gag aag tta cgt gaa aaa Pro Val Glu Asp Leu Ala Gly Asn Leu Trp Glu Lys Leu Arg Glu Lys	830
160 165 170	
atc agg tct ttt gtg gca tat tct atc gca atc gat gag atc acg gat Ile Arg Ser Phe Val Ala Tyr Ser Ile Ala Ile Asp Glu Ile Thr Asp	878
175 180 185	
ata aat aat acc acc cag ttg gcc ata ttc atc cgt ggt gtc gat gag Ile Asn Asn Thr Thr Gln Leu Ala Ile Phe Ile Arg Gly Val Asp Glu	926
190 195 200 205	
aat ttc gat gtg tcc gaa gaa ctt ctg gac acg gtg ccc atg acg ggt Asn Phe Asp Val Ser Glu Glu Leu Leu Asp Thr Val Pro Met Thr Gly	974
210 215 220	
aca aaa tct ggc aac gag atc ttt tcg cgt gtt gag aag acg ctg aaa Thr Lys Ser Gly Asn Glu Ile Phe Ser Arg Val Glu Lys Ser Leu Lys	1022
225 230 235	
aag ttc tgt atc gac tgg tcg aaa tta gta agc gtg gcc tcc act ggc Lys Phe Cys Ile Asp Trp Ser Lys Leu Val Ser Val Ala Ser Thr Gly	1070
240 245 250	

acc cca gcg atg gtg gat gcc aat aac ggg ctt gtc aca aaa ctg aag 1118  
 Thr Pro Ala Met Val Asp Ala Asn Asn Gly Leu Val Thr Lys Leu Lys  
 255 260 265

tcc agg gtg gcg acg ttc tgc aag ggt gcg gaa ctg aag tcc atc tgt 1166  
 Ser Arg Val Ala Thr Phe Cys Lys Gly Ala Glu Leu Lys Ser Ile Cys  
 270 275 280 285

tgt ata att cat ccg gaa tca ctc tgt gct cag aag ttg aag atg gac 1214  
 Cys Ile Ile His Pro Glu Ser Leu Cys Ala Gln Lys Leu Lys Met Asp  
 290 295 300

cac gtc atg gac gtg gta gtg aag tcc gtg aac tgg ata tgc tcc cg 1262  
 His Val Met Asp Val Val Lys Ser Val Asn Trp Ile Cys Ser Arg  
 305 310 315

gga ctg aac cac agc gag ttc aca acc ttg ctc tat gag ctg gac agc 1310  
 Gly Leu Asn His Ser Glu Phe Thr Thr Leu Tyr Glu Leu Asp Ser  
 320 325 330

cag tat ggt agc ctc ctg tac tac acg gag att aag tgg ctc agt cgc 1358  
 Gln Tyr Gly Ser Leu Leu Tyr Thr Glu Ile Lys Trp Leu Ser Arg  
 335 340 345

ggg ctc gtg cta aag aga ttt ttc gaa tcc ttg gaa gaa atc gac tcc 1406  
 Gly Leu Val Leu Lys Arg Phe Glu Ser Leu Glu Glu Ile Asp Ser  
 350 355 360 365

ttc atg tca tcc aga ggg aaa ccc ctg cct caa ctg agc tcc ata gat 1454  
 Phe Met Ser Ser Arg Gly Lys Pro Leu Pro Gln Leu Ser Ser Ile Asp  
 370 375 380

tgg atc cga gac ctg gcc ttc ttg gtt gac atg acg atg cat ctg aac 1502  
 Trp Ile Arg Asp Leu Ala Phe Leu Val Asp Met Thr Met His Leu Asn  
 385 390 395

gct ttg aac atc tct ctc caa gga cac tcc caa atc gtc acg cag atg 1550  
 Ala Leu Asn Ile Ser Leu Gln Gly His Ser Gln Ile Val Thr Gln Met  
 400 405 410

tat gac ctg atc cgg gcg ttc cta gca aaa ctg tgc ctc tgg gag act 1598  
 Tyr Asp Leu Ile Arg Ala Phe Leu Ala Lys Leu Cys Leu Trp Glu Thr  
 415 420 425

cat ttg acg agg aat aat ctg gcc cac ttt ccc acc ctg aaa ttg gtt 1646  
 His Leu Thr Arg Asn Asn Leu Ala His Phe Pro Thr Leu Lys Leu Val  
 430 435 440 445

tcc aga aat gaa agc gat ggc ctg aac tac att ccc aaa atc gcg gaa 1694  
 Ser Arg Asn Glu Ser Asp Gly Leu Asn Tyr Ile Pro Lys Ile Ala Glu  
 450 455 460

ctc aag acc gaa ttc cag aaa agg ctg tct gat ttc aaa ctc tac gaa 1742  
 Leu Lys Thr Glu Phe Gln Lys Arg Leu Ser Asp Phe Lys Leu Tyr Glu  
 465 470 475

agc gaa ctg act ctg ttc agc tcc ccc ttc acg aag atc gac agt 1790  
 Ser Glu Leu Thr Leu Phe Ser Ser Pro Phe Ser Thr Lys Ile Asp Ser  
 480 485 490

gtg cac gag gag ctc cag atg gag gtt atc gac ctg caa tgc aac acg 1838  
 Val His Glu Glu Leu Gln Met Glu Val Ile Asp Leu Gln Cys Asn Thr  
 495 500 505

gtc ctg aag acg aaa tac gac aag gtg gga ata cca gaa ttc tac aag Val Leu Lys Thr Lys Tyr Asp Lys Val Gly Ile Pro Glu Phe Tyr Lys 510                   515                   520                   525	1886
tac ctc tgg ggt agc tac ccg aaa tac aag cac cat tgc gca aag att Tyr Leu Trp Gly Ser Tyr Pro Lys Tyr Lys His His Cys Ala Lys Ile 530                   535                   540	1934
ctt tcc atg ttc ggg agc acc tac atc tgc gaa cag ctg ttc tcc att Leu Ser Met Phe Gly Ser Thr Tyr Ile Cys Glu Gln Leu Phe Ser Ile 545                   550                   555	1982
atg aaa ctg agc aaa aca aaa tac tgc tcc cag tta aag gat tcc cag Met Lys Leu Ser Lys Thr Lys Tyr Cys Ser Gln Leu Lys Asp Ser Gln 560                   565                   570	2030
tgg gat tct gta ctc cac atc gca acg tga t ggagagaaaa ctcctggcag Trp Asp Ser Val Leu His Ile Ala Thr *575                   580	2081
ggccctatgg tggaaaggc tggagtcttc tagtcccaag ggattggag atgacaaaat gaatttttt tttctttttt gagatggagt cttgctctgt cgccccagggtt ggagtgcagt ggcgtgatct cggcttactg caacttccag ctcctgggtt cgaacgattc tcctgcctca gcctcccgag cagctggac tacaggcatg cgccaccatg cccggtaat ttttgtatta gtagagatga ggttcacca tggtggccag gctggtctcc aactcctgac ctcaggtgat ccacctgcct cgacctcaca aagtgctggg attacaggca tgaaccactg tgcccagctg acaatatgag ttcttaaact ttttttttt ttcagttttt tttccacttt gaatcagaaa tataatctgc agtatcatac ttgtttatat tacattgtat gcctcaactat tcattaaaaa tcaagaaaatg tttattgtaa aaaaaaaaaaa	2141 2201 2261 2321 2381 2441 2501 2561 2591

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<220>  
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<222> (12) .. (1097)

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cac ctg ctg ctg gtg gcc gcc ctg ccc tgg gca tcc agg ggg gtc His Leu Leu Leu Val Ala Ala Leu Pro Trp Ala Ser Arg Gly Val 15                 20                 25	98
agt ccg agt gcc tca gcc tgg cca gag gag aag aat tac cac cag cca Ser Pro Ser Ala Ser Ala Trp Pro Glu Glu Lys Asn Tyr His Gln Pro 30                 35                 40                 45	146
gcc att ttg aat tca tcg gct ctt cgg caa att gca gaa ggc acc agt	194

Ala Ile Leu Asn Ser Ser Ala Leu Arg Gln Ile Ala Glu Gly Thr Ser	50	55	60		
atc tct gaa atg tgg caa aat gac tta cag cca ttg ctg ata gag cga Ile Ser Glu Met Trp Gln Asn Asp Leu Gln Pro Leu Leu Ile Glu Arg	65	70	75	242	
tac ccg gga tcc cct gga agc tat gct gct cgt cag cac atc atg cag Tyr Pro Gly Ser Pro Gly Ser Tyr Ala Ala Arg Gln His Ile Met Gln	80	85	90	290	
cga att cag agg ctt cag gct gac tgg gtc ttg gaa ata gac acc ttc Arg Ile Gln Arg Leu Gln Ala Asp Trp Val Leu Glu Ile Asp Thr Phe	95	100	105	338	
ttg agt cag aca ccc tat ggg tac cgg tct ttc tca aat atc atc agc Leu Ser Gln Thr Pro Tyr Gly Tyr Arg Ser Phe Ser Asn Ile Ile Ser	110	115	120	125	386
acc ctc aat ccc act gct aaa cga cat ttg gtc ctc gcc tgc cac tat Thr Leu Asn Pro Thr Ala Lys Arg His Leu Val Leu Ala Cys His Tyr	130	135	140		434
gac tcc aag tat ttt tcc cac tgg aac aac aga gtg ttt gta gga gcc Asp Ser Lys Tyr Phe Ser His Trp Asn Asn Arg Val Phe Val Gly Ala	145	150	155		482
act gat tca gcc gtg cca tgt gca atg atg ttg gaa ctt gct cgt gcc Thr Asp Ser Ala Val Pro Cys Ala Met Met Leu Glu Leu Ala Arg Ala	160	165	170		530
tta gac aag aaa ctc ctt tcc tta aag act gtt tca gac tcc aag cca Leu Asp Lys Lys Leu Leu Ser Leu Lys Thr Val Ser Asp Ser Lys Pro	175	180	185		578
gat ttg tca ctc cag ctg atc ttc ttt gat ggt gaa gag gct ttt ctt Asp Leu Ser Leu Gln Leu Ile Phe Phe Asp Gly Glu Glu Ala Phe Leu	190	195	200	205	626
cac tgg tct cct caa gat tct ctc tat ggg tct cga cac tta gct gca His Trp Ser Pro Gln Asp Ser Leu Tyr Gly Ser Arg His Leu Ala Ala	210	215	220		674
aag atg gca tcg acc ccg cac cca cct gga gcg aga ggc acc agc caa Lys Met Ala Ser Thr Pro His Pro Pro Gly Ala Arg Gly Thr Ser Gln	225	230	235		722
ctg cat ggc atg gat tta ttg gtc tta ttg gat ttg att gga gct cca Leu His Gly Met Asp Leu Leu Val Leu Leu Asp Leu Ile Gly Ala Pro	240	245	250		770
aac cca acg ttt ccc aat ttt ttt cca aac tca gcc agg tgg ttc gaa Asn Pro Thr Phe Pro Asn Phe Phe Pro Asn Ser Ala Arg Trp Phe Glu	255	260	265		818
aga ctt caa gca att gaa cat gaa ctt cat gaa ttg ggt ttg ctc aag Arg Leu Gln Ala Ile Glu His Glu Leu His Glu Leu Gly Leu Leu Lys	270	275	280	285	866
gat cac tct ttg gag ggg cgg tat ttc cag aat tac agt tat gga ggt Asp His Ser Leu Glu Gly Arg Tyr Phe Gln Asn Tyr Ser Tyr Gly Gly	290	295	300		914
gtg att cag gat gac cat att cca ttt tta aga aga ggt gtt cca gtt					962

Val Ile Gln Asp Asp His Ile Pro Phe Leu Arg Arg Gly Val Pro Val		
305	310	315
ctg cat ctg ata ccg tct cct ttc cct gaa gtc tgg cac acc atg gat		1010
Leu His Leu Ile Pro Ser Pro Phe Pro Glu Val Trp His Thr Met Asp		
320	325	330
gac aat gaa gaa aat ttg gat gaa tca acc att gac aat cta aac aaa		1058
Asp Asn Glu Glu Asn Leu Asp Glu Ser Thr Ile Asp Asn Leu Asn Lys		
335	340	345
atc cta caa gtc ttt gtg ttg gaa tat ctt cat ttg taa tactotgatt		1107
Ile Leu Gln Val Phe Val Leu Glu Tyr Leu His Leu *		
350	355	360
tagtttagga taattgggttc tagaattgaa ttcaaaaagtc aaggcatcat ttaaaaataat		1167
ctgatttcag acaaatgctg tgtggaaaca tctatccat agatcatcct attcttatgt		1227
gtcttgggtt atcagatcaa ttacagaata attgtgttgt gatattgtgt cctaaattgc		1287
tcattaattt ttatttacag attaaaaaag aggccccgtg taaagaaaat ggcaaaataa		1347
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aggttagcctt tcgaatttta tgatttttc atatgtggaa atcttattaca tgtaatacaa		1467
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cac ctg ctg ctg gtg gcc gcc ctg ccc tgg gca tcc agg ggg gtc		98
His Leu Leu Leu Val Ala Ala Leu Pro Trp Ala Ser Arg Gly Val		
15	20	25

agt ccg agt gcc tca gcc tgg cca gag gag aag cac atc atg cag cga		146
Ser Pro Ser Ala Ser Ala Trp Pro Glu Glu Lys His Ile Met Gln Arg		
30	35	40

att cag agg ctt cag gct gac tgg gtc ttg gaa ata gac acc ttc ttg		194
Ile Gln Arg Leu Gln Ala Asp Trp Val Leu Glu Ile Asp Thr Phe Leu		
50	55	60

agt cag aca ccc tat ggg tac cgg tct ttc tca aat atc atc agc acc		242
Ser Gln Thr Pro Tyr Gly Tyr Arg Ser Phe Ser Asn Ile Ile Ser Thr		
65	70	75

ctc aat ccc act gct aaa cga cat ttg gtc ctc gcc tgc cac tat gac Leu Asn Pro Thr Ala Lys Arg His Leu Val Leu Ala Cys His Tyr Asp 80 85 90	290
tcc aag tat ttt tcc cac tgg aac aac aga gtg ttt gta gga gcc act Ser Lys Tyr Phe Ser His Trp Asn Asn Arg Val Phe Val Gly Ala Thr 95 100 105	338
gat tca gcc gtg cca tgt gca atg atg ttg gaa ctt gct cgt gcc tta Asp Ser Ala Val Pro Cys Ala Met Met Leu Glu Leu Ala Arg Ala Leu 110 115 120 125	386
gac aag aaa ctc ctt tcc tta aag act gtt tca gac tcc aag cca gat Asp Lys Lys Leu Leu Ser Leu Lys Thr Val Ser Asp Ser Lys Pro Asp 130 135 140	434
ttg tca ctc cag ctg atc ttc ttt gat ggt gaa gag gct ttt ctt cac Leu Ser Leu Gln Leu Ile Phe Phe Asp Gly Glu Glu Ala Phe Leu His 145 150 155	482
tgg tct cct caa gat tct ctc tat ggg tct cga cac tta gct gca aag Trp Ser Pro Gln Asp Ser Leu Tyr Gly Ser Arg His Leu Ala Ala Lys 160 165 170	530
atg gca tcg acc ccg cac cca cct gga gcg aga ggc acc agc caa ctg Met Ala Ser Thr Pro His Pro Pro Gly Ala Arg Gly Thr Ser Gln Leu 175 180 185	578
cat ggc atg gat tta ttg gtc tta ttg gat ttg att gga gct cca aac His Gly Met Asp Leu Leu Val Leu Leu Asp Leu Ile Gly Ala Pro Asn 190 195 200 205	626
cca acg ttt ccc aat ttt ttt cca aac tca gcc agg tgg ttc gaa aga Pro Thr Phe Pro Asn Phe Phe Pro Asn Ser Ala Arg Trp Phe Glu Arg 210 215 220	674
ctt caa gca att gaa cat gaa ctt cat gaa ttg ggt ttg ctc aag gat Leu Gln Ala Ile Glu His Glu Leu His Glu Leu Gly Leu Leu Lys Asp 225 230 235	722
cac tct ttg gag ggg cggttat ttc cag aat tac agt tat gga ggt gtg His Ser Leu Glu Gly Arg Tyr Phe Gln Asn Tyr Ser Tyr Gly Gly Val 240 245 250	770
att cag gat gac cat att cca ttt tta aga aga ggt gtt cca gtt ctg Ile Gln Asp Asp His Ile Pro Phe Leu Arg Arg Gly Val Pro Val Leu 255 260 265	818
cat ctg ata ccg tct ctc cct gaa gtc tgg cac acc atg gat gac His Leu Ile Pro Ser Pro Phe Pro Glu Val Trp His Thr Met Asp Asp 270 275 280 285	866
aat gaa gaa aat ttg gat gaa tca acc att gac aat cta aac aaa atc Asn Glu Glu Asn Leu Asp Glu Ser Thr Ile Asp Asn Leu Asn Lys Ile 290 295 300	914
cta caa gtc ttt gtg ttg gaa tat ctt cat ttg taa tact ctgatgttagt Leu Gln Val Phe Val Glu Tyr Leu His Leu *305 310	964
ttaggataat tggttctaga attgaattca aaagtcaagg catcatttaa aataatctga tttcagacaa atgctgtgtg gaaacatcta tcctatagat catcctatttc ttatgtgtct	1024 1084

ttggttatca gatcaattac agaataattg tttgtgata ttgtgccta aattgctcat	1144
taatttttat ttacagattt aaaaagaggc accgtgtaaa gaaaatggca aaataaaatat	1204
ctttccaagg atcatcatca cgatagctaa acagtactta aatagcggtt ggaacttaggt	1264
agcctttcga attttatgtat ttttcataat gtggaaatctt attacatgtat atacaaaaca	1324
aacatgtatgt ttgaaggcgg tcagattctt ttgagaaatctt ttgttagatgt taattttatgt	1384
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acc atg tcg agc aaa aga aca aag acc aag aag cgc cct cag Met Ser Ser Lys Arg Thr Lys Thr Lys Lys Arg Pro Gln	168
1 5 10 15	
cgt gca aca tcc aat gtg ttt gct atg ttt gac cag tca cag att cag Arg Ala Thr Ser Asn Val Phe Ala Met Phe Asp Gln Ser Gln Ile Gln	216
20 25 30	
gag ttc aaa gag gcc ttc aac atg att gat cag aac aga gat ggt ttc Glu Phe Lys Glu Ala Phe Asn Met Ile Asp Gln Asn Arg Asp Gly Phe	264
35 40 45	
atc gac aag gaa gat ttg cat gat atg ctt gct tca ttg ggg aag aat Ile Asp Lys Glu Asp Leu His Asp Met Leu Ala Ser Leu Gly Lys Asn	312
50 55 60	
cca act gat gag tat cta gat gcc atg atg aat gag gct cca ggc ccc Pro Thr Asp Glu Tyr Leu Asp Ala Met Met Asn Glu Ala Pro Gly Pro	360
65 70 75	
atc aat ttc acc atg ttc ctc acc atg ttt ggt gag aag tta aat ggc Ile Asn Phe Thr Met Phe Leu Thr Met Phe Gly Glu Lys Leu Asn Gly	408
80 85 90 95	
aca gat cct gaa gat gtc atc aga aat gcc ttt gct tgc ttt gat gaa Thr Asp Pro Glu Asp Val Ile Arg Asn Ala Phe Ala Cys Phe Asp Glu	456
100 105 110	
gaa gca act ggc acc ata cag gaa gat tac ttg aga gag ctg ctg aca Glu Ala Thr Gly Thr Ile Gln Glu Asp Tyr Leu Arg Glu Leu Leu Thr	504
115 120 125	
acc atg ggg gat cgg ttt aca gat gag gaa gtg gat gag ctg tac aga Thr Met Gly Asp Arg Phe Thr Asp Glu Glu Val Asp Glu Leu Tyr Arg	552
130 135 140	

gaa gca cct att gat aaa aag ggg aat ttc aat tac atc gag ttc aca Glu Ala Pro Ile Asp Lys Lys Gly Asn Phe Asn Tyr Ile Glu Phe Thr 145 150 155	600
cgc atc ctg aaa cat gga gcc aaa gac aaa gat gac tga aataacttca Arg Ile Leu Lys His Gly Ala Lys Asp Lys Asp Asp * 160 165 170	649
aattccagcc aaacgttccct tgttgccact ttgggtattc tgagatttgc tcttgcatgc ccttagcttt acagctttg catttcctgt tgtatttatt ctcagccatt ttgggcataat gtatctttat aatcagactg gaaacgggac tttctattaa tatcatttgc agaataaaaa ataggtaat ttaacctacc agcccttctc ccccaataac tgtggtctat acagagtcaa tatatttttt cagagaaaagt tattcgctcg atttttctg aatcataatt aaactttatg ataaaataaa aaaaaaaaaa	709 769 829 889 949 968

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acc gat gat agt cga gtt ggg ggc att atg aga gga gag aaa aac tac Thr Asp Asp Ser Arg Val Gly Gly Ile Met Arg Gly Glu Lys Asn Tyr 35 40 45	144
tac ttc cgt gga gct gcg ggg gac cac ggt tcc tgc ccc act aca act Tyr Phe Arg Gly Ala Ala Gly Asp His Gly Ser Cys Pro Thr Thr Thr 50 55 60	192
tcg cct ctg gcc tcg gcc ctc ttg atg ccc tcg gag gca gtc tca agc Ser Pro Leu Ala Ser Ala Leu Leu Met Pro Ser Glu Ala Val Ser Ser 65 70 75 80	240
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act cgg ctc ctt caa ctc ctc cgc act gcc cgg gat cct tct gag gcc Thr Arg Leu Leu Gln Leu Leu Arg Thr Ala Arg Asp Pro Ser Glu Ala 100 105 110	336
ttc cag gct ttg caa gct gct ttg ccg cgg cgg ggc ggt cga ctt ggc Phe Gln Ala Leu Gln Ala Leu Pro Arg Arg Gly Gly Arg Leu Gly	384

115	120	125	
ttc ccc cga cgc aag gaa gct ttg tat cgg gca ctg ggc cga gtg ctt Phe Pro Arg Arg Lys Glu Ala Leu Tyr Arg Ala Leu Gly Arg Val Leu 130	135	140	432
tg gaa gga ggt agt gat gag aag cgg ctc tgc ttg caa ctt ctc tcg Val Glu Gly Gly Ser Asp Glu Lys Arg Leu Cys Leu Gln Leu Leu Ser 145	150	155	480
gac gtt ctc cgg ggt cag ggg gag gca ggc cag ctt gaa gag gcc ttt Asp Val Leu Arg Gly Gln Gly Glu Ala Gly Gln Leu Glu Glu Ala Phe 165	170	175	528
agc tta gca ctt ttg cct caa cta gtt gtc tcg tta cgg gaa gag aat Ser Leu Ala Leu Leu Pro Gln Leu Val Val Ser Leu Arg Glu Glu Asn 180	185	190	576
cca gcc ctg cgg aaa gat gcg ctg cag atc ctt cat ata tgt ctg aaa Pro Ala Leu Arg Lys Asp Ala Leu Gln Ile Leu His Ile Cys Leu Lys 195	200	205	624
cgt agt cct gga gag gtg ctg aga acg ctt ata caa caa gga ctg gaa Arg Ser Pro Gly Glu Val Leu Arg Thr Leu Ile Gln Gln Gly Leu Glu 210	215	220	672
agt acc gat gcc cga ctt aga gct tcc aca gca cta ctg ctt ccc atc Ser Thr Asp Ala Arg Leu Arg Ala Ser Thr Ala Leu Leu Leu Pro Ile 225	230	235	720
ttg ctt act act gag gac ttg ttg ctt ggt ctg gat ctc acc gag gtg Leu Leu Thr Thr Glu Asp Leu Leu Gly Leu Asp Leu Thr Glu Val 245	250	255	768
ata ata tcc cta gcc cga aag ctt ggt gat cag gag aca gaa gaa gaa Ile Ile Ser Leu Ala Arg Lys Leu Gly Asp Gln Glu Thr Glu Glu Glu 260	265	270	816
tct gag aca gct ttc tcc gca ctt caa caa att ggg gag cga ctt ggc Ser Glu Thr Ala Phe Ser Ala Leu Gln Gln Ile Gly Glu Arg Leu Gly 275	280	285	864
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aga cac tac aat cgc cgc ctg gag tcc cag ttt gga agt cag gtt cct Arg His Tyr Asn Arg Arg Leu Glu Ser Gln Phe Gly Ser Gln Val Pro 305	310	315	960
tat tat ttg gaa ctt gaa gcc tct gga ttt cct gaa gat ccc ctt ccc Tyr Tyr Leu Glu Leu Ala Ser Gly Phe Pro Glu Asp Pro Leu Pro 325	330	335	1008
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cag gag ctg cat tca cga tta ttg gat cag gaa gac tat aag aac cgg Gln Glu Leu His Ser Arg Leu Leu Asp Gln Glu Asp Tyr Lys Asn Arg 355	360	365	1104
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370	375	380	
agt tct act cct cat tct agt ctt gtt ggc ttc att agt ttg cta tat Ser Ser Thr Pro His Ser Ser Leu Val Gly Phe Ile Ser Leu Leu Tyr 385 390 395 400			1200
aat ttg tta gac gat tct aac ttc aaa gtg gtg cat ggc aca ctt gaa Asn Leu Leu Asp Asp Ser Asn Phe Lys Val Val His Gly Thr Leu Glu 405 410 415			1248
gtc ctg cat tta ctg gtt att cgc ctt gga gag cag gta cag cag ttc Val Leu His Leu Leu Val Ile Arg Leu Gly Glu Gln Val Gln Gln Phe 420 425 430			1296
ttg gga cca gtt ata gca gct tct gtc aaa gtg ctg gcg gac aac aag Leu Gly Pro Val Ile Ala Ala Ser Val Lys Val Leu Ala Asp Asn Lys 435 440 445			1344
ttg gtg atc aaa caa gaa tae atg aaa atc ttc ctc aag cta atg aag Leu Val Ile Lys Gln Glu Tyr Met Lys Ile Phe Leu Lys Leu Met Lys 450 455 460			1392
gaa gta gga cct cag cag gtg ctt tgt tta ctc ctg gaa cat ctc aaa Glu Val Gly Pro Gln Gln Val Leu Cys Leu Leu Glu His Leu Lys 465 470 475 480			1440
cat aag cat tcc aga gtg aga gag gag gtg gtg aac att tgc atc tgc His Lys His Ser Arg Val Arg Glu Glu Val Val Asn Ile Cys Ile Cys 485 490 495			1488
tcc ctg ctg acc tat cct agt gag gat ttt gac ttg ccc aaa ctg tcc Ser Leu Leu Thr Tyr Pro Ser Glu Asp Phe Asp Leu Pro Lys Leu Ser 500 505 510			1536
ttt gat ctt gcc cca gct ctt gta gat agc aaa cgc agg gta cgc caa Phe Asp Leu Ala Pro Ala Leu Val Asp Ser Lys Arg Arg Val Arg Gln 515 520 525			1584
gca gct tta gaa gct ttt gcc gta ttg gca tca tca atg ggc tca ggt Ala Ala Leu Glu Ala Phe Ala Val Leu Ala Ser Ser Met Gly Ser Gly 530 535 540			1632
aaa acc agc atc ctt ttt aaa gct gtg gat aca gtt gaa ctg caa gat Lys Thr Ser Ile Leu Phe Lys Ala Val Asp Thr Val Glu Leu Gln Asp 545 550 555 560			1680
aat gga gat gga gtg atg aat gct gtg cag gcc aga ttg gct agg aaa Asn Gly Asp Gly Val Met Asn Ala Val Gln Ala Arg Leu Ala Arg Lys 565 570 575			1728
acc tta cca agg ctc aca gag cag gga ttt gtg gaa tat gca gta ctg Thr Leu Pro Arg Leu Thr Glu Gln Gly Phe Val Glu Tyr Ala Val Leu 580 585 590			1776
atg cca tct tct gcc ggg ggt agg tca aac cat ttg gca cat gga gca Met Pro Ser Ser Ala Gly Gly Arg Ser Asn His Leu Ala His Gly Ala 595 600 605			1824
gat acg gac tgg ctt ttg gct ggt aac aga act cag agt gca cac tgt Asp Thr Asp Trp Leu Leu Ala Gly Asn Arg Thr Gln Ser Ala His Cys 610 615 620			1872
cac tgt ggt gac cac gtg agg gat agc atg cac att tat gga tct tac His Cys Gly Asp His Val Arg Asp Ser Met His Ile Tyr Gly Ser Tyr			1920

625	630	635	640	
agc cca act atc tgt acc cga agg gta tta agt gca gga aaa gga aaa Ser Pro Thr Ile Cys Thr Arg Arg Val Leu Ser Ala Gly Lys Gly Lys 645		650	655	1968
aat aaa tta cca tgg gaa aat gag caa cct gga atc atg gga gaa aac Asn Lys Leu Pro Trp Glu Asn Glu Gln Pro Gly Ile Met Gly Glu Asn 660	665	670		2016
cag acc tcc act tcc aag gat ata gag cag ttt tca aca tat gat ttc Gln Thr Ser Thr Ser Lys Asp Ile Glu Gln Phe Ser Thr Tyr Asp Phe 675	680	685		2064
atc cca tct gca aaa tta aag ctt tct caa gga atg cca gtc aat gat Ile Pro Ser Ala Lys Leu Lys Leu Ser Gln Gly Met Pro Val Asn Asp 690	695	700		2112
gat tta tgt ttt agc aga aaa aga gta tca aga aac tta ttt cag aat Asp Leu Cys Phe Ser Arg Lys Arg Val Ser Arg Asn Leu Phe Gln Asn 705	710	715	720	2160
agt cgg gat ttt aac cca gat tgt ctt cct tta tgt gct gct ggt act Ser Arg Asp Phe Asn Pro Asp Cys Leu Pro Leu Cys Ala Ala Gly Thr 725	730	735		2208
act ggg act cat caa aca aat ctt tct ggg aaa tgt gca caa ctt gga Thr Gly Thr His Gln Thr Asn Leu Ser Gly Lys Cys Ala Gln Leu Gly 740	745	750		2256
ttt tca caa ata tgt ggt aaa act ggc agt gtg ggt tct gac tta caa Phe Ser Gln Ile Cys Gly Lys Thr Gly Ser Val Gly Ser Asp Leu Gln 755	760	765		2304
tcc cta ggg aca act agc agt cat caa gaa aaa gtg tat gct agc ctc Phe Leu Gly Thr Thr Ser Ser His Gln Glu Lys Val Tyr Ala Ser Leu 770	775	780		2352
aat ttt ggc agt aag aca cag caa aca ttt ggt agt caa aca gag tgt Asn Phe Gly Ser Lys Thr Gln Gln Thr Phe Gly Ser Gln Thr Glu Cys 785	790	795	800	2400
act tcc tca aat ggt caa aat cca agt cca gga gct tac atc ctt cca Thr Ser Ser Asn Gly Gln Asn Pro Ser Pro Gly Ala Tyr Ile Leu Pro 805	810	815		2448
tcc tat cct gtc tca tca cct cga act agt cca aag cat aca tct cct Ser Tyr Pro Val Ser Ser Pro Arg Thr Ser Pro Lys His Thr Ser Pro 820	825	830		2496
ctt att ata tct cca aag aag tct caa gat aat tct gtt aat ttc tca Leu Ile Ile Ser Pro Lys Lys Ser Gln Asp Asn Ser Val Asn Phe Ser 835	840	845		2544
aat tcc tgg cct ctt aaa agc ttc gaa gga cta tca aag cca agt cca Asn Ser Trp Pro Leu Lys Ser Phe Glu Gly Leu Ser Lys Pro Ser Pro 850	855	860		2592
cag aag aag ctt gtc agc caa aaa tcg tct gat cct acg ggt aga aat Gln Lys Lys Leu Val Ser Gln Lys Ser Ser Asp Pro Thr Gly Arg Asn 865	870	875	880	2640
cat gga gaa aat tct caa gaa aaa cct cca gtt cag ctt aca cct gcc His Gly Glu Asn Ser Gln Glu Lys Pro Pro Val Gln Leu Thr Pro Ala				2688

885	890	895	
ttg gtg aga tcg cca tct tcc cga cga ggt cta aat ggg aca aag cct Leu Val Arg Ser Pro Ser Ser Arg Arg Gly Leu Asn Gly Thr Lys Pro			2736
900	905	910	
gtt cct ccc ata cca agg gga ata agc ctt ttg cct gat aaa gct gat Val Pro Pro Ile Pro Arg Gly Ile Ser Leu Leu Pro Asp Lys Ala Asp			2784
915	920	925	
tta agc aca gtg gga cac aaa aag aaa gag cct gat gat att tgg aag Leu Ser Thr Val Gly His Lys Lys Lys Glu Pro Asp Asp Ile Trp Lys			2832
930	935	940	
tgt gaa aaa gat agt ctt cca att gat ctt tca gaa tta aat ttc aag Cys Glu Lys Asp Ser Leu Pro Ile Asp Leu Ser Glu Leu Asn Phe Lys			2880
945	950	955	960
gat aaa gat ttg gat caa gaa gag atg cat agc tct ctt agg tcc ctt Asp Lys Asp Leu Asp Gln Glu Glu Met His Ser Ser Leu Arg Ser Leu			2928
965	970	975	
cgt aat agt gca gct aag aaa aga gca aaa ctg agt ggc agt act tca Arg Asn Ser Ala Ala Lys Lys Arg Ala Lys Leu Ser Gly Ser Thr Ser			2976
980	985	990	
gat ctt gaa agc cct gat tct gca atg aag ctc gac ttg acg atg gac Asp Leu Glu Ser Pro Asp Ser Ala Met Lys Leu Asp Leu Thr Met Asp			3024
995	1000	1005	
tcc ccg tct ctg tct tcc tca cca aac atc aat tct tac agt gaa agt Ser Pro Ser Leu Ser Ser Pro Asn Ile Asn Ser Tyr Ser Glu Ser			3072
1010	1015	1020	
gga gtt tac agc caa gaa tca ttg act tct tct ctg tct aca act ccc Gly Val Tyr Ser Gln Glu Ser Leu Thr Ser Ser Leu Ser Thr Thr Pro			3120
1025	1030	1035	1040
cag ggg aag aga ata atg tca gac ata ttt cca aca ttt ggg tca aaa Gln Gly Lys Arg Ile Met Ser Asp Ile Phe Pro Thr Phe Gly Ser Lys			3168
1045	1050	1055	
cct tgt cca aca aga ctt tct gca aag aaa att tct cat att Pro Cys Pro Thr Arg Leu Ser Ser Ala Lys Lys Lys Ile Ser His Ile			3216
1060	1065	1070	
gct gaa caa agc ccc agt gca ggg tca tca aat cca cag caa att Ala Glu Gln Ser Pro Ser Ala Gly Ser Ser Asn Pro Gln Gln Ile			3264
1075	1080	1085	
tcc agt ttt gac ttc aca acc aca aag gct tta tca gaa gac tca gta Ser Ser Phe Asp Phe Thr Thr Lys Ala Leu Ser Glu Asp Ser Val			3312
1090	1095	1100	
gta gtt gtt gga aaa ggc gta ttt gga agt tta agt tca gca cca gca Val Val Val Gly Lys Gly Val Phe Gly Ser Leu Ser Ser Ala Pro Ala			3360
1105	1110	1115	1120
acc tgc agc caa tca gtg ata tct tct gtg gaa aat ggg gat aca ttt Thr Cys Ser Gln Ser Val Ile Ser Ser Val Glu Asn Gly Asp Thr Phe			3408
1125	1130	1135	
tca att aaa caa agt att gaa cca cca tca ggg att tat gga aga tca Ser Ile Lys Gln Ser Ile Glu Pro Pro Ser Gly Ile Tyr Gly Arg Ser			3456

1140	1145	1150	
gtc cag caa aat att tca tca tat ctt gat gtt gag aat gaa aaa gat Val Gln Gln Asn Ile Ser Ser Tyr Leu Asp Val Glu Asn Glu Lys Asp			3504
1155	1160	1165	
gct aaa gtt tct att tct aaa tct act tat aac aag atg aga caa aaa Ala Lys Val Ser Ile Ser Lys Ser Thr Tyr Asn Lys Met Arg Gln Lys			3552
1170	1175	1180	
aaa aaa gaa aag aaa gaa ctg ttt cac aat aaa gat tgt gaa aag aag Lys Lys Glu Lys Lys Glu Leu Phe His Asn Lys Asp Cys Glu Lys Lys			3600
1185	1190	1195	1200
gaa aaa aat tcc tgg gaa cga atg aga cat aca gga act gag aaa atg Glu Lys Asn Ser Trp Glu Arg Met Arg His Thr Gly Thr Glu Lys Met			3648
1205	1210	1215	
gca tct gaa agt gaa aca cct act gga gct att tca cag tat aaa gaa Ala Ser Glu Ser Glu Thr Pro Thr Gly Ala Ile Ser Gln Tyr Lys Glu			3696
1220	1225	1230	
agg atg cct tct gtc act cat agt cca gaa ata atg gat ctg tca gaa Arg Met Pro Ser Val Thr His Ser Pro Glu Ile Met Asp Leu Ser Glu			3744
1235	1240	1245	
cta cga cca ttc tct aaa cca gaa ata gca ctg aca gaa gcc ctg agg Leu Arg Pro Phe Ser Lys Pro Glu Ile Ala Leu Thr Glu Ala Leu Arg			3792
1250	1255	1260	
ctt ttg gct gat gag gat tgg gag aag aaa att gag gga ctg aat ttt Leu Leu Ala Asp Glu Asp Trp Glu Lys Lys Ile Glu Gly Leu Asn Phe			3840
1265	1270	1275	1280
att aga tgc tta gct gct ttt cat tct gag ata ctg aac aca aag ttg Ile Arg Cys Leu Ala Ala Phe His Ser Glu Ile Leu Asn Thr Lys Leu			3888
1285	1290	1295	
cat gaa aca aat ttt gca gtt gtt caa gag gtg aaa aat tta cgt tct His Glu Thr Asn Phe Ala Val Val Gln Glu Val Lys Asn Leu Arg Ser			3936
1300	1305	1310	
gga gtt tct cgt gct gtc gtg ttt agt gat ctt ttc act tat Gly Val Ser Arg Ala Ala Val Val Cys Leu Ser Asp Leu Phe Thr Tyr			3984
1315	1320	1325	
ttg aaa aag agc atg gat caa gag cta gat acc aca gta aaa gtt ttg Leu Lys Lys Ser Met Asp Gln Glu Leu Asp Thr Thr Val Lys Val Leu			4032
1330	1335	1340	
ttg cac aag gct ggt gaa tca aat aca ttt ata aga gaa gat gtt gac Leu His Lys Ala Gly Glu Ser Asn Thr Phe Ile Arg Glu Asp Val Asp			4080
1345	1350	1355	1360
aaa gca ttg aga gct atg gtt aat aat gta act cct gca cgt gca gtt Lys Ala Leu Arg Ala Met Val Asn Asn Val Thr Pro Ala Arg Ala Val			4128
1365	1370	1375	
gtt tct ctt atc aat ggt gga caa agg tat tat ggt cga aag atg ctg Val Ser Leu Ile Asn Gly Gly Gln Arg Tyr Tyr Gly Arg Lys Met Leu			4176
1380	1385	1390	
ttc ttc atg atg tgt cat cct aac ttt gaa aaa atg ctt gaa aag tat Phe Phe Met Met Cys His Pro Asn Phe Glu Lys Met Leu Glu Lys Tyr			4224

1395	1400	1405	
gtc cca tct aaa gat ttg cca tat att aag gac tct gtt aga aac tta Val Pro Ser Lys Asp Leu Pro Tyr Ile Lys Asp Ser Val Arg Asn Leu 1410	1415	1420	4272
cag caa aag ggt ttg ggg gag ata cca tta gat act cct tca gca aaa Gln Gln Lys Gly Leu Gly Glu Ile Pro Leu Asp Thr Pro Ser Ala Lys 1425	1430	1435	4320
gga aga cga tct cat act ggc agt gtt gga aat aca aga tca tca tct Gly Arg Arg Ser His Thr Gly Ser Val Gly Asn Thr Arg Ser Ser Ser 1445	1450	1455	4368
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cgt gaa gtc acc aga aaa tca gtc cct cgt aat tcc tta gaa agt gct Arg Glu Val Thr Arg Lys Ser Val Pro Arg Asn Ser Leu Glu Ser Ala 1475	1480	1485	4464
gag tac ctt aaa ctc ata act ggc tta tta aat gca aaa gac ttt cgt Glu Tyr Leu Lys Leu Ile Thr Gly Leu Leu Asn Ala Lys Asp Phe Arg 1490	1495	1500	4512
gat cgt att aat ggg att aag cag ctt tta tca gat aca gaa aat aat Asp Arg Ile Asn Gly Ile Lys Gln Leu Leu Ser Asp Thr Glu Asn Asn 1505	1510	1515	4560
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aaa gtg ttg gtt tta tgg cat ctc tta gga aat atg aca aat agt Lys Val Leu Val Val Leu Trp His Leu Leu Gly Asn Met Thr Asn Ser			4992

1650	1655	1660	
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1665	1670	1675	1680
tta tca aaa gca ctc ttt gca cag atg ggt cag aat ctg tta aat cag Leu Ser Lys Ala Leu Phe Ala Gln Met Gly Gln Asn Leu Leu Asn Gln			5088
1685	1690	1695	
gct gca tct caa cca cca cat atc aaa aag agt ttg gag gaa tta ctc Ala Ala Ser Gln Pro Pro His Ile Lys Lys Ser Leu Glu Glu Leu Leu			5136
1700	1705	1710	
gat atg aca att tta aat gaa tta tga atctt cgataaaaata ctgtatgatg Asp Met Thr Ile Leu Asn Glu Leu *			5188
1715	1720		
aacaaaagtg tttacatgat gacaaatgga actttctaaa agttatgtta tcagtgcctg			5248
cacttcacat ccagcaaatt aagtcaatgg ctatTTTtat ttgcagccta tgagtacaca			5308
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aatttgtgaaa tttaacaagt tataataaag catgacaacc aaagtttttag aaaacattaa			5788
acattttaaa tgcacgttta aaaaacgtgt tgaatgtaac cccccatattt ttgtgtgcaa			5848
acactaaatt ttattgctt atgttttgac ctttataaag gtgttattct gctgcccagt			5908
tttgtaattc tcaaaaatag tgccaggctc tctatagctt tttcagaat tcatgggctt			5968
acaagtactg tatgcatctt taaaaagaaa aggaatgtta taaaataaaa ggattttat			6028
ctttaaaaaa aaaaaa			6044

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 <211> 1526  
 <212> DNA  
 <213> Homo sapiens

<220>  
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 <222> (504) .. (1526)

<400> 565  
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 gttgtcaggc tcctcactcc cgcttccggc ttagccttc ttcagcttcc tccactccct  
 120

ggctgcagca gctgccttca aggccactcg cagcgatgct ggccgcggaa tcacacgac	180
aacgcggccct tggcttgcgg gaaccgcctt cctgcttcgg ttggcgtcac ttccactggg	240
gggggcgtgg ccgcggcgca ggccgcgtgg gtggttcaga agcgaattct gcaccgcgaa	300
gcctgagagg caggttagctg cggcgctggg ctggcggcgg cgagtccacg tgctccccgc	360
ggccgggttga aaccgttggc gggcgctggc tgagaggcaa tgtttgctgt ctccattgg	420
agtgactgaa tttctacatg acggctttt gacaagactt aaaacctgtc ttggatagag	480
aatatttacgc catttaccta aaa atg gta ttt ttt aca tgc aat gca tgt Met Val Phe Phe Thr Cys Asn Ala Cys	530
1 5	
ggt gaa tca gtg aag aaa ata caa gtg gaa aag cat gtg tct gtt tgc Gly Glu Ser Val Lys Lys Ile Gln Val Glu Lys His Val Ser Val Cys	578
10 15 20 25	
aga aac tgt gaa tgc ctt tct tgc att gac tgc ggt aaa gat ttc tgg Arg Asn Cys Glu Cys Leu Ser Cys Ile Asp Cys Gly Lys Asp Phe Trp	626
30 35 40	
ggc gat gac tat aaa aac cac gtg aaa tgc ata agt gaa gat cag aag Gly Asp Asp Tyr Lys Asn His Val Lys Cys Ile Ser Glu Asp Gln Lys	674
45 50 55	
tat ggt ggc aaa ggc tat gaa ggt aaa acc cac aaa ggc gac atc aaa Tyr Gly Lys Gly Tyr Glu Gly Lys Thr His Lys Gly Asp Ile Lys	722
60 65 70	
cag cag gcg tgg att cag aaa att agt gaa tta ata aag aga ccc aat Gln Gln Ala Trp Ile Gln Lys Ile Ser Glu Leu Ile Lys Arg Pro Asn	770
75 80 85	
gtc agc ccc aaa gtg aga gaa ctt tta gag caa att agt gct ttt gac Val Ser Pro Lys Val Arg Glu Leu Leu Glu Gln Ile Ser Ala Phe Asp	818
90 95 100 105	
aac gtt ccc agg aaa aag gca aaa ttt cag aat tgg atg aag aac agt Asn Val Pro Arg Lys Lys Ala Lys Phe Gln Asn Trp Met Lys Asn Ser	866
110 115 120	
tta aaa gtt cat aat gaa tcc att ctg gac cag gtg tgg aat atc ttt Leu Lys Val His Asn Glu Ser Ile Leu Asp Gln Val Trp Asn Ile Phe	914
125 130 135	
tct gaa gct tcc aac agc gaa cca gtc aat aag gaa cag gat caa cgg Ser Glu Ala Ser Asn Ser Glu Pro Val Asn Lys Glu Gln Asp Gln Arg	962
140 145 150	
cca ctc cac cca gtg gca aat cca cat gca gaa atc tcc acc aag gtt Pro Leu His Pro Val Ala Asn Pro His Ala Glu Ile Ser Thr Lys Val	1010
155 160 165	
cca gcc tcc aaa gtg aaa gac gcc gtg gaa cag caa ggg gag gtg aag Pro Ala Ser Lys Val Lys Asp Ala Val Glu Gln Gln Gly Glu Val Lys	1058
170 175 180 185	
aag aat aaa aga gaa aag gaa cgg cag aag aaa agg aaa aga Lys Asn Lys Arg Glu Arg Lys Glu Arg Gln Lys Lys Arg Lys Arg	1106
190 195 200	

gaa aag aaa gaa cta aag tta gaa aac cac cag gaa aac tca agg aat Glu Lys Lys Glu Leu Lys Leu Glu Asn His Gln Glu Asn Ser Arg Asn 205                    210                    215	1154
cag aag cct aag aag cgc aaa aag gga cag gag gct gac ctt gag gct Gln Lys Pro Lys Lys Arg Lys Lys Gly Gln Glu Ala Asp Leu Glu Ala 220                    225                    230	1202
ggt ggg gag gaa gtc cct gag gcc aat ggc tct gca ggg aag agg agc Gly Gly Glu Val Pro Glu Ala Asn Gly Ser Ala Gly Lys Arg Ser 235                    240                    245	1250
aag aag aag cag cgc aag gac agc gcc agt gag gaa gag gca cgc Lys Lys Lys Gln Arg Lys Asp Ser Ala Ser Glu Glu Ala Arg 250                    255                    260                    265	1298
gtg ggc gca ggg aag agg aag cgg agg cac tcg gaa gtt gaa aca gat Val Gly Ala Gly Lys Arg Lys Arg Arg His Ser Glu Val Glu Thr Asp 270                    275                    280	1346
tct aag aag aaa aag atg aag ctc cca gag cat cct gag ggc gga gaa Ser Lys Lys Lys Met Lys Leu Pro Glu His Pro Glu Gly Gly Glu 285                    290                    295	1394
cca gaa gac gat gag gct cct gca aaa gac ccg tgg cag atg ttg ctg Pro Glu Asp Asp Glu Ala Pro Ala Lys Asp Pro Trp Gln Met Leu Leu 300                    305                    310	1442
atc aaa tgc agc att tat ttc cct ttg aca gcc agg tgg aag cct caa Ile Lys Cys Ser Ile Tyr Phe Pro Leu Thr Ala Arg Trp Lys Pro Gln 315                    320                    325	1490
aat cct gaa gag cac cgg aaa atc act gcc agt tga Asn Pro Glu Glu His Arg Lys Ile Thr Ala Ser * 330                    335                    340	1526

<210> 566  
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 <212> DNA  
 <213> Homo sapiens

<220>  
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 <222> (133)..(693)

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tgctccctgc ggggtgcaggc tgggcttagc tccgctggac ccgcgcgtggg gaactctggc	120
ctcgctgcac tc atg gct tct cct agc aag gca gtg att gtt ccc ggg Met Ala Ser Pro Ser Lys Ala Val Ile Val Pro Gly 1                    5                    10	168
aac gga ggc ggg gat gtg acc acc cac ggc tgg tat ggc tgg gtg aaa Asn Gly Gly Asp Val Thr Thr His Gly Trp Tyr Gly Trp Val Lys 15                    20                    25	216
aag gag ctg gag aag ata cct ggt ttc cag tgt ttg gct aaa aac atg	264

Lys Glu Leu Glu Lys Ile Pro Gly Phe Gln Cys Leu Ala Lys Asn Met			
30	35	40	
ccc gac cca att aca gca cga gag agc atc tgg ctg ccc ttc atg gag		312	
Pro Asp Pro Ile Thr Ala Arg Ser Ile Trp Leu Pro Phe Met Glu			
45	50	55	60
aca gag ctg cac tgt gat gag aag act atc atc att ggc cac agt tct		360	
Thr Glu Leu His Cys Asp Glu Lys Thr Ile Ile Ile Gly His Ser Ser			
65	70	75	
ggg gcc atc gcg gcc atg agg tat gca gaa aca cat cga gta tat gct		408	
Gly Ala Ile Ala Ala Met Arg Tyr Ala Glu Thr His Arg Val Tyr Ala			
80	85	90	
att gta tta gtg tct gcg tac aca tca gac ttg ggg gat gaa aat gag		456	
Ile Val Leu Val Ser Ala Tyr Thr Ser Asp Leu Gly Asp Glu Asn Glu			
95	100	105	
cgt gca agt gga tac ttc acc cgc ccc tgg cag tgg gag aag atc aag		504	
Arg Ala Ser Gly Tyr Phe Thr Arg Pro Trp Gln Trp Glu Lys Ile Lys			
110	115	120	
gcc aac tgc cct tac att gtg cag ttt gcc tct act gac gac ccg ttc		552	
Ala Asn Cys Pro Tyr Ile Val Gln Phe Gly Ser Thr Asp Asp Pro Phe			
125	130	135	140
ctt ccc tgg aag gaa caa caa gaa gtg gcc gat agg ttg gaa acc aaa		600	
Leu Pro Trp Lys Glu Gln Gln Glu Val Ala Asp Arg Leu Glu Thr Lys			
145	150	155	
ttg cac aaa ttc act gac tgt ggc cac ttt cag aac aca gag ttt cat		648	
Leu His Lys Phe Thr Asp Cys Gly His Phe Gln Asn Thr Glu Phe His			
160	165	170	
gaa ctg att act gtt gta aag tct ttg ctg aaa gta cca gca tag		693	
Glu Leu Ile Thr Val Val Lys Ser Leu Leu Lys Val Pro Ala *			
175	180	185	

<210> 567  
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<212> DNA  
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<220>  
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<222> (102)..(2279)

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ggccctata gtgacagtga gtgcgtgaga cccggagaga g	atg gcg atg gcg	113	
	Met Ala Met Ala		
	1		
atg tcg gac agt ggg gcg agc cgc ctg cgt cgg cag ctg gag tca ggg		161	
Met Ser Asp Ser Gly Ala Ser Arg Leu Arg Arg Gln Leu Glu Ser Gly			
5	10	15	20
ggt ttt gag gcg cgg ctg tac gtg aag cag ctc tcg cag cag tcg gat		209	

Gly Phe Glu Ala Arg Leu Tyr Val Val Lys Gln Leu Ser Gln Gln Ser Asp		
25	30	35
ggg gac cgg gac ctc cag gag cac cgg cag cgc atc cag gcg ctg gcg		257
Gly Asp Arg Asp Leu Gln Glu His Arg Gln Arg Ile Gln Ala Leu Ala		
40	45	50
gag gag acg gcg cag aac ctg aag cgc aac gtc tac cag aac tac cgg		305
Glu Glu Thr Ala Gln Asn Leu Lys Arg Asn Val Tyr Gln Asn Tyr Arg		
55	60	65
cag ttc ata gag acg gcc cgc gag atc tcc tac ctg gag agc gag atg		353
Gln Phe Ile Glu Thr Ala Arg Glu Ile Ser Tyr Leu Glu Ser Glu Met		
70	75	80
tac cag ctc agc cat ttg ctg acc gag cag aaa agc agc ctg gag agc		401
Tyr Gln Leu Ser His Leu Leu Thr Glu Gln Lys Ser Ser Leu Glu Ser		
85	90	95
atc ccg ctt acg ttg ctg cct gcc gct gct gcc gca gca gac cac		449
Ile Pro Leu Thr Leu Leu Pro Ala Ala Ala Ala Gly Ala Ala Ala		
105	110	115
gcc tct gga ggg gag gga gtc ggt ggg gcg ggg ggc cga gac cac		497
Ala Ser Gly Gly Glu Glu Gly Val Gly Ala Gly Gly Arg Asp His		
120	125	130
ctc cga ggc cag gcc ggc ttt ttc tcc acc ccc ggg ggt gcc tcc cgc		545
Leu Arg Gly Gln Ala Gly Phe Ser Thr Pro Gly Gly Ala Ser Arg		
135	140	145
gac ggc tcc ggt cca ggc gag gaa gga aag cag cgc act ctc acc acc		593
Asp Gly Ser Gly Pro Gly Glu Glu Gly Lys Gln Arg Thr Leu Thr Thr		
150	155	160
ctg ctt gag aag gtg gaa ggc tgc agg cat ctg ctg gag acg ccc gga		641
Leu Leu Glu Lys Val Glu Gly Cys Arg His Leu Leu Glu Thr Pro Gly		
165	170	175
180		
cag tac ttg gtg tac aat ggg gac cta gtg gaa tac gat gcg gac cac		689
Gln Tyr Leu Val Tyr Asn Gly Asp Leu Val Glu Tyr Asp Ala Asp His		
185	190	195
atg gcc caa ctg cag cgg gtg cac ggc ttt ctc atg aac gat tgc ttg		737
Met Ala Gln Leu Gln Arg Val His Gly Phe Leu Met Asn Asp Cys Leu		
200	205	210
ttg gtg gct acc tgg ctg cct cag cgg cgt ggg atg tat cgc tac aac		785
Leu Val Ala Thr Trp Leu Pro Gln Arg Arg Gly Met Tyr Arg Tyr Asn		
215	220	225
gct ctc tat tcc cta gat ggt ttg gcc gta gtc aat gtc aag gac aac		833
Ala Leu Tyr Ser Leu Asp Gly Leu Ala Val Val Asn Val Lys Asp Asn		
230	235	240
ccg ccc atg aag gac atg ttc aag ctg ctt atg ttc ccc gag aac cgt		881
Pro Pro Met Lys Asp Met Phe Lys Leu Leu Met Phe Pro Glu Asn Arg		
245	250	255
260		
att ttc cag gcc gaa aat gct aaa atc aaa cga gag tgg ctg gaa gtg		929
Ile Phe Gln Ala Glu Asn Ala Lys Ile Lys Arg Glu Trp Leu Glu Val		
265	270	275
ctg gag gac acc aag agg gcc ctc agt gag aaa agg cga agg gag cag		977

Leu Glu Asp Thr Lys Arg Ala Leu Ser Glu Lys Arg Arg Arg Glu Gln			
280	285	290	
gag gag gca gcg gcc cct cga ggg cca ccc caa gtg act tcc aag gcc			1025
Glu Glu Ala Ala Ala Pro Arg Gly Pro Pro Gln Val Thr Ser Lys Ala			
295	300	305	
act aac cca ttt gag gat gac gaa gaa gaa cca gct gtt cct gag			1073
Thr Asn Pro Phe Glu Asp Asp Glu Glu Glu Pro Ala Val Pro Glu			
310	315	320	
gta gag gaa gag aag gtg gac ctc tcc atg gaa tgg atc cag gag tta			1121
Val Glu Glu Glu Lys Val Asp Leu Ser Met Glu Trp Ile Gln Glu Leu			
325	330	335	340
cct gaa gac ctg gat gtc tgc att gcg cag aga gac ttt gaa ggg gcg			1169
Pro Glu Asp Leu Asp Val Cys Ile Ala Gln Arg Asp Phe Glu Gly Ala			
345	350	355	
gtt gac ctg ctg gat aaa ttg aac cat tac ctg gaa gat aaa cct agc			1217
Val Asp Leu Leu Asp Lys Leu Asn His Tyr Leu Glu Asp Lys Pro Ser			
360	365	370	
cca cct cct gta aaa gaa cta agg gcc aaa gtg gag gag cga gtt cga			1265
Pro Pro Pro Val Lys Glu Leu Arg Ala Lys Val Glu Glu Arg Val Arg			
375	380	385	
cag ctc act gag gtg cta gtt ttc gaa ctc tcc cca gat cgt tcc ctg			1313
Gln Leu Thr Glu Val Leu Val Phe Glu Leu Ser Pro Asp Arg Ser Leu			
390	395	400	
aga ggt ggt ccg aag gct act cgc aga gca gtt tcg caa ctg atc cgg			1361
Arg Gly Gly Pro Lys Ala Thr Arg Arg Ala Val Ser Gln Leu Ile Arg			
405	410	415	420
ctg ggc cag tgc acg aag gcc tgt gag cta ttt ttg aga aac agg gca			1409
Leu Gly Gln Cys Thr Lys Ala Cys Glu Leu Phe Leu Arg Asn Arg Ala			
425	430	435	
gcc gct gtt cat act gca att cgt cag ctt cgc atc gaa ggt gcc act			1457
Ala Ala Val His Thr Ala Ile Arg Gln Leu Arg Ile Glu Gly Ala Thr			
440	445	450	
tta ctc tat att cat aag ctg tgc cat gtc ttc ttt acc agc ctt ctc			1505
Leu Leu Tyr Ile His Lys Leu Cys His Val Phe Phe Thr Ser Leu Leu			
455	460	465	
gag act gca aga gaa ttt gag atc gat ttt gca ggc act gac agc ggc			1553
Glu Thr Ala Arg Glu Phe Glu Ile Asp Phe Ala Gly Thr Asp Ser Gly			
470	475	480	
tgc tac tct gcc ttt gtg gtc tgg gca aga tca gcc atg ggc atg ttc			1601
Cys Tyr Ser Ala Phe Val Val Trp Ala Arg Ser Ala Met Gly Met Phe			
485	490	495	500
gtg gat gct ttt agc aag cag gtg ttt gat agt aag gag agc ctc tct			1649
Val Asp Ala Phe Ser Lys Gln Val Phe Asp Ser Lys Glu Ser Leu Ser			
505	510	515	
aca gca gct gag tgg gta aaa gtg gct aag gag cat tgc cag caa ctg			1697
Thr Ala Ala Glu Cys Val Lys Val Ala Lys Glu His Cys Gln Gln Leu			
520	525	530	
ggt gat atc gga ctg gat ctc acc ttc atc atc cat gcc ctt ctg gtg			1745

Gly Asp Ile Gly Leu Asp Leu Thr Phe Ile Ile His Ala Leu Leu Val		
535	540	545
aaa gac atc caa ggg gcc ttg cac agt tac aaa gaa atc atc att gaa		1793
Lys Asp Ile Gln Gly Ala Leu His Ser Tyr Lys Glu Ile Ile Ile Glu		
550	555	560
gcc act aaa cat cgc aac tct gaa gag atg tgg agg agg atg aac ttg		1841
Ala Thr Lys His Arg Asn Ser Glu Glu Met Trp Arg Arg Met Asn Leu		
565	570	575
atg acg cca gaa gcc ctg ggt aag ctc aaa gaa gag atg aaa agt tgt		1889
Met Thr Pro Glu Ala Leu Gly Lys Leu Lys Glu Glu Met Lys Ser Cys		
585	590	595
ggg gta agt aac ttt gag cag tac aca ggg gat gac tgc tgg gtg aac		1937
Gly Val Ser Asn Phe Glu Gln Tyr Thr Gly Asp Asp Cys Trp Val Asn		
600	605	610
cta agt tac aca gtg gtt gct ttc acc aaa cag acc atg ggc ttc ttg		1985
Leu Ser Tyr Thr Val Val Ala Phe Thr Lys Gln Thr Met Gly Phe Leu		
615	620	625
gaa gag gcc ctg aag ctg tat ttc cca gag ctg cac atg gta ctt ttg		2033
Glu Glu Ala Leu Lys Leu Tyr Phe Pro Glu Leu His Met Val Leu Leu		
630	635	640
gag agc ctg gtg gaa atc att ttg gtt gct gtt cag cat gtg gat tat		2081
Glu Ser Leu Val Glu Ile Ile Leu Val Ala Val Gln His Val Asp Tyr		
645	650	655
660		
agt ctt cga tgt gag cag gat cca gag aag aaa gct ttt atc aga cag		2129
Ser Leu Arg Cys Glu Gln Asp Pro Glu Lys Lys Ala Phe Ile Arg Gln		
665	670	675
aat gca tcc ttt tta tat gaa aca gtc ctc cct gtg gag aaa agg		2177
Asn Ala Ser Phe Leu Tyr Glu Thr Val Leu Pro Val Val Glu Lys Arg		
680	685	690
ttt gaa gaa ggt gtg ggg aaa cct gcc aag caa ctc caa gat ctg agg		2225
Phe Glu Glu Gly Val Gly Lys Pro Ala Lys Gln Leu Gln Asp Leu Arg		
695	700	705
aat gca tct aga ctt att cgt gtg aat cct gaa agt aca aca tca gtg		2273
Asn Ala Ser Arg Leu Ile Arg Val Asn Pro Glu Ser Thr Thr Ser Val		
710	715	720
gtc taa tgctggtc tgtttatatg tgtatatatg cagagagctt tatattattt		2329
Val *		
725		
atatttatat taagttgtat tagcatactc tatagttca aacacaactt gaaaattaaa		2389
agtgcctct taaaaataca aaaaaaaaaa a		2420

<210> 568  
<211> 1482  
<212> DNA  
<213> Homo sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (68)...(1129)

<400> 568

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1 5 10	
ggc cac att gtc cac aac tgg aag gcg cga tgg ttc atc ctt cgg cag Gly His Ile Val His Asn Trp Lys Ala Arg Trp Phe Ile Leu Arg Gln	157
15 20 25 30	
aac acg ctg gtg tac tac aag ctt gag ggg ggt cgg aga gtg acc cct Asn Thr Leu Val Tyr Tyr Lys Leu Glu Gly Arg Arg Val Thr Pro	205
35 40 45	
ccc aag ggc cgg atc ctc ctg gat ggc tgc acc atc acc tgc ccc tgc Pro Lys Gly Arg Ile Leu Leu Asp Gly Cys Thr Ile Thr Cys Pro Cys	253
50 55 60	
ctg gag tat gaa aac cga ccg ctc ctc att aag ctg aag actcaa aca Leu Glu Tyr Glu Asn Arg Pro Leu Leu Ile Lys Leu Thr Gln Thr	301
65 70 75	
tcc acg gag tac ttc ctg gag gcc tgg tct cga gag gag cgg gat gcc Ser Thr Glu Tyr Phe Leu Glu Ala Cys Ser Arg Glu Glu Arg Asp Ala	349
80 85 90	
tgg gcc ttt gag atc acc ggg gct att cat gca ggg cag cgg ggg aag Trp Ala Phe Glu Ile Thr Gly Ala Ile His Ala Gly Gln Pro Gly Lys	397
95 100 105 110	
gtc cag cag ctg cac agc ctg aga aac tcc ttc aag ctg ccc ccc cac Val Gln Gln Leu His Ser Leu Arg Asn Ser Phe Lys Leu Pro Pro His	445
115 120 125	
atc agc ctg cat cgc att gtg gac aag atg cac gat agc aac acc gga Ile Ser Leu His Arg Ile Val Asp Lys Met His Asp Ser Asn Thr Gly	493
130 135 140	
atc cgt tca agc ccc aac atg gag cag gga agc acc tat aaa aag acc Ile Arg Ser Ser Pro Asn Met Glu Gln Gly Ser Thr Tyr Lys Lys Thr	541
145 150 155	
tcc ctc ggc tcc tcc ctg gtg gac tgg ctc atc tcc aac agc ttc acg Phe Leu Gly Ser Ser Leu Val Asp Trp Leu Ile Ser Asn Ser Phe Thr	589
160 165 170	
gcc agc cgt ctg gag gcg gtg acc ctg gcc tcc atg ctc atg gag gag Ala Ser Arg Leu Glu Ala Val Thr Leu Ala Ser Met Leu Met Glu Glu	637
175 180 185 190	
aac ttc ctc agg cct gtg ggt gtc cga agc atg gga gcc att cgc tct Asn Phe Leu Arg Pro Val Gly Val Arg Ser Met Gly Ala Ile Arg Ser	685
195 200 205	
ggg gat .ctg gcc gag cag ttc ctg gat gac tcc aca gcc ctg tac act Gly Asp Leu Ala Glu Gln Phe Leu Asp Asp Ser Thr Ala Leu Tyr Thr	733
210 215 220	
ttt gct gag agc tac aaa aag aag ata agc ccc aag gaa gaa att agc Phe Ala Glu Ser Tyr Lys Lys Ile Ser Pro Lys Glu Glu Ile Ser	781

225	230	235	
ctg agc act gtg gag tta agt ggc acg gtg gtg aaa caa ggc tac ctg Leu Ser Thr Val Glu Leu Ser Gly Thr Val Val Lys Gln Gly Tyr Leu 240 245 250			829
gcc aag cag gga cac aag agg aaa aac tgg aag gtg cgt cgc ttt gtt Ala Lys Gln Gly His Lys Arg Lys Asn Trp Lys Val Arg Arg Phe Val 255 260 265 270			877
cta agg aag gat cca gct ttc ctg cat tac tat gac cct tcc aaa gaa Leu Arg Lys Asp Pro Ala Phe Leu His Tyr Tyr Asp Pro Ser Lys Glu 275 280 285			925
gag aac agg cca gtg ggt ggg ttt tct ctt cgt ggt tca ctc gtg tct Glu Asn Arg Pro Val Gly Gly Phe Ser Leu Arg Gly Ser Leu Val Ser 290 295 300			973
gct ctg gaa gat aat ggc gtt ccc act ggg gtt aaa ggg aat gtc cag Ala Leu Glu Asp Asn Gly Val Pro Thr Gly Val Lys Gly Asn Val Gln 305 310 315			1021
gga aac ctc ttc aaa gtg att act aag gat gac aca cac tat tac att Gly Asn Leu Phe Lys Val Ile Thr Lys Asp Asp Thr His Tyr Tyr Ile 320 325 330			1069
cag gcc agc agc aag gct gag cga gcc gag tgg att gaa gct atc aaa Gln Ala Ser Ser Lys Ala Glu Arg Ala Glu Trp Ile Glu Ala Ile Lys 335 340 345 350			1117
aag cta aca tga caa ggacctgagg gaaccaggat tcctccctcc taccagatga Lys Leu Thr *			1172
cacagacaag agttcctgga gaatgggagt gttaaagactt ttgacttctt tgtaagtttt gtactgcttt ggagagtgaa tgctgccaag agttcctcag attacaaaaca gcagtggcgc catttccttc cccatcttca tgttacaaac ctggaaaggc tagaacagcc attaggcgtc agcatcttga cttttccccca gcatcacaaa cagccatttc ctgggcacc aaagttaggtt cccttggtg gaacaattac actggccatg ccataatgtt gaataaaaact ctcttcttaa aaaaaaaaaaaa			1232 1292 1352 1412 1472 1482
<pre> &lt;210&gt; 569 &lt;211&gt; 4245 &lt;212&gt; DNA &lt;213&gt; Homo sapiens  &lt;220&gt; &lt;221&gt; CDS &lt;222&gt; (106)..(3132)  &lt;400&gt; 569 ccgaaagagt ccttggaggt ctctgctgga gttcttgagc atgcccccat cctgctcacc 60 atcaggtgag agacacctgt ccctgttcag ttccccatca gtaaa atg ggg aga Met Gly Arg 1 </pre>			

aat tcc aag cac act tct cag agc aga gca gaa gag gtt gac tat gga Asn Ser Lys His Thr Ser Gln Ser Arg Ala Glu Glu Val Asp Tyr Gly	162
5 10 15	
 gag gag aat gaa gat ggg acc cag gtg agc ccg ggt gcc cac tac tgc. Glu Glu Asn Glu Asp Gly Thr Gln Val Ser Pro Gly Ala His Tyr Cys	210
20 25 30 35	
 agc ccc act ggc gca ggc tgc ccc agg ccc tgt gca gac aca cca ggc Ser Pro Thr Gly Ala Gly Cys Pro Arg Pro Cys Ala Asp Thr Pro Gly	258
40 45 50	
 cct cag ccg cag ccc atg gac ctg cgg gtg ggc cag cgg ccc cca gtg Pro Gln Pro Gln Pro Met Asp Leu Arg Val Gly Gln Arg Pro Pro Val	306
55 60 65	
 gag ccc cca cca gag ccc aca ttg ctg gcc ctg cag cgt ccc cag cgc Glu Pro Pro Pro Glu Pro Thr Leu Leu Ala Leu Gln Arg Pro Gln Arg	354
70 75 80	
 ctg cac cac cac ctc ttc cta gca ggc ctg cag cag cgc tcg gtg Leu His His Leu Phe Leu Ala Gly Leu Gln Gln Gln Arg Ser Val	402
85 90 95	
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Thr Glu Asn Pro Met Val Arg His Glu Cys Ala Glu Ala Leu Gly Ala	*	
210	215	220
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Ile Ala Arg Pro Ala Cys Leu Ala Ala Leu Gln Ala His Ala Asp Asp		
225	230	235
cca gag cgc gtg gtg cgt gag agc tgc gag gtg gct ctg gac atg tat	889	
Pro Glu Arg Val Val Arg Glu Ser Cys Glu Val Ala Leu Asp Met Tyr		
240	245	250
gag cac gag acc ggg cgg gcc ttc cag tac gcg gac ggc ctg gag cag	937	
Glu His Glu Thr Gly Arg Ala Phe Gln Tyr Ala Asp Gly Leu Glu Gln		
255	260	265
ctg cgc ggg gcc ccc tcc tag gg ccccaccctc acccggagct cccggaggac	990	
Leu Arg Gly Ala Pro Ser *		
270	275	
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gtgtcatcgc ttgtgtcttg ctggcgcat gtttgcgtgc cccctccctcc gtctgggacc	1110	
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cagagctggg gctctggaa gaggctgacg ttatggtggc ttcagcttca ctaggaatgg	1470	
gacacagggt ctggggcct ctgactcccc caccccgagg cctgggtagg gacagggtgg	1530	
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tgaagcttcc tgactcttcc ctgttatata ggaaggcctt caaagacctg aatacttagt	180
agccagtgcgca gcagggtttc agggctggc ctggggaggg gaggggaggg ggagggcagg	240
ttgcagctca agtggcttta gagatgctga gcctctcctt ctgtccgtcc caggacgcaa	300

tgagccccctg aagaaaagagc ggcttaagtg gaagagcgac tacccc	atg act gac Met Thr Asp 1	355
ggg cag ctg cg <sup>5</sup> agc aaa cg <sup>10</sup> gat gag ttc tgg gac aca gc <sup>15</sup> g cct gcc Gly Gln Leu Arg Ser Lys Arg Asp Glu Phe Trp Asp Thr Ala Pro Ala		403
ttc gag ggc cgc aag gag atc tgg gat gcc ctc aag gct gcc gcc tat Phe Glu Gly Arg Lys Glu Ile Trp Asp Ala Leu Lys Ala Ala Ala Tyr 20 25 30 35		451
gct gct gaa gcc aac gac cac gag ctg gcc cag gcc atc ctg gat gga Ala Ala Glu Ala Asn Asp His Glu Leu Ala Gln Ala Ile Leu Asp Gly 40 45 50		499
gcc agc atc acc ctg cct cat gcc acc ctc tgt gaa tgc tac gat gag Ala Ser Ile Thr Leu Pro His Gly Thr Leu Cys Glu Cys Tyr Asp Glu 55 60 65		547
ctg ggc aat cgc tac cag ctg ccc atc tac tgc ctg tca ccg ccg gtg Leu Gly Asn Arg Tyr Gln Leu Pro Ile Tyr Cys Leu Ser Pro Pro Val 70 75 80		595
aac ctg ctg ctg gag cac acg gag gag agc ctg gag ccc ccc gag Asn Leu Leu Glu His Thr Glu Glu Glu Ser Leu Glu Pro Pro Glu 85 90 95		643
cct cca ccc agc gtg cgc cgt gag ttc ccg ctg aag gtg cgc ctg tcc Pro Pro Pro Ser Val Arg Arg Glu Phe Pro Leu Lys Val Arg Leu Ser 100 105 110 115		691
acg ggc aag gac gtg agg ctc agc gcc agc ctg ccc gac aca gtg ggg Thr Gly Lys Asp Val Arg Leu Ser Ala Ser Leu Pro Asp Thr Val Gly 120 125 130		739
cag ctc aag agg cag ctg cac gcc cag gag ggc atc gag cca tcg tgg Gln Leu Lys Arg Gln Leu His Ala Gln Glu Gly Ile Glu Pro Ser Trp 135 140 145		787
cag cgg tgg ttc tcc tcc ggg aag ctg ctc aca gac cgc aca cgg ctc Gln Arg Trp Phe Phe Ser Gly Lys Leu Leu Thr Asp Arg Thr Arg Leu 150 155 160		835
cag gag acc aag atc cag aaa gat ttt gtc atc cag gtc atc atc aac Gln Glu Thr Lys Ile Gln Lys Asp Phe Val Ile Gln Val Ile Ile Asn 165 170 175		883
cag ccc cca cca ccc cag gac tga tggccacg gaccctggg aagaggcccc Gln Pro Pro Pro Gln Asp *		937
180 185		
gcctggagca ctagggccccc accctgtgc tgccttccag tgctgtcatt ttcttcaggg		997
gcctccctt cggtgtggct ggtgggtgag ccgtgaaggg accctgcctt tcagggcact		1057
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cctggctgta acccaggcag tgggaggct gcagcctggt catggctcc acagcaggtc	1537
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aaa	1600

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 <212> DNA  
 <213> Homo sapiens

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aaccggggaa tgagggactt ggtctggcgg cagatcacaa tgaggaccta gggcatctgt	180
ctgctgacgc cccctggct gcagtgacc atg gcc ccc cgc aag agg agc cac	233
Met Ala Pro Arg Lys Arg Ser His	
1 5	
cat ggc ctg ggc ttc ctg tgc tgc ttc ggg ggc agt gac atc ccc gaa	281
His Gly Leu Gly Phe Leu Cys Cys Phe Gly Gly Ser Asp Ile Pro Glu	
10 15 20	
atc aac ctc cgg gac aac cac cct ctg cag ttc atg gag ttc tcc agc	329
Ile Asn Leu Arg Asp Asn His Pro Leu Gln Phe Met Glu Phe Ser Ser	
25 30 35 40	
ccc atc ccg aac gca gag gag ctc aac atc cgc ttt gca gag ctg gtg	377
Pro Ile Pro Asn Ala Glu Glu Leu Asn Ile Arg Phe Ala Glu Leu Val	
45 50 55	
gat gaa ttg gat ctc act gac aaa aac cga gag gct atg ttt gca ctg	425
Asp Glu Leu Asp Leu Thr Asp Lys Asn Arg Glu Ala Met Phe Ala Leu	
60 65 70	
ccc cct gag aag aaa tgg cag atc tac tgc agc aag aag gag cag	473
Pro Pro Glu Lys Lys Trp Gln Ile Tyr Cys Ser Lys Lys Glu Gln	
75 80 85	
gag gac ccc aac aag ctg gca acc agc tgg cct gac tat tac atc gac	521
Glu Asp Pro Asn Lys Leu Ala Thr Ser Trp Pro Asp Tyr Tyr Ile Asp	
90 95 100	
cgc atc aat tcc atg gct gcg atg cag agt ctg tac gcg ttt gat gag	569
Arg Ile Asn Ser Met Ala Ala Met Gln Ser Leu Tyr Ala Phe Asp Glu	
105 110 115 120	
gag gag acg gag atg agg aac caa gtc gtg gaa gac ctg aag aca gcc	617

Glu Glu Thr Glu Met Arg Asn Gln Val Val Glu Asp Leu Lys Thr Ala			
125	130	135	
ctc cgg aca cag cct atg agg ttt gtg acc cgc ttc att gag ctg gag		665	
Leu Arg Thr Gln Pro Met Arg Phe Val Thr Arg Phe Ile Glu Leu Glu			
140	145	150	
ggc ttg acc tgt ctg cta aat ttc ctc cgg agc atg gac cac gcc acc		713	
Gly Leu Thr Cys Leu Leu Asn Phe Leu Arg Ser Met Asp His Ala Thr			
155	160	165	
tgt gag agc cgc atc cac acc tca ctc att ggc tgc atc aaa gca ttg		761	
Cys Glu Ser Arg Ile His Thr Ser Leu Ile Gly Cys Ile Lys Ala Leu			
170	175	180	
atg aac aac tcc cag ggg cgg gca cat gtg ctg gca cag cct gag gcc		809	
Met Asn Asn Ser Gln Gly Arg Ala His Val Leu Ala Gln Pro Glu Ala			
185	190	195	200
att agt acc ata gcc cag agc cta cgc aca gag aac agt aag acc aag		857	
Ile Ser Thr Ile Ala Gln Ser Leu Arg Thr Glu Asn Ser Lys Thr Lys			
205	210	215	
gtg gct gtg ctg gag atc ctg ggt gct gtg tgc ctc gtg cct ggt ggc		905	
Val Ala Val Leu Glu Ile Leu Gly Ala Val Cys Leu Val Pro Gly Gly			
220	225	230	
cac aag aag gtg ctg cag gcc atg ctg cac tac cag gtg tat gca gca		953	
His Lys Lys Val Leu Gln Ala Met Leu His Tyr Gln Val Tyr Ala Ala			
235	240	245	
gag cga acc cgc ttc cag acc ctg ctg aac gag cta gac cga agt ctg		1001	
Glu Arg Thr Arg Phe Gln Thr Leu Leu Asn Glu Leu Asp Arg Ser Leu			
250	255	260	
ggc cgg tac cgg gat gaa gtg aat ctg aaa aca gcc atc atg tcc ttc		1049	
Gly Arg Tyr Arg Asp Glu Val Asn Leu Lys Thr Ala Ile Met Ser Phe			
265	270	275	280
atc aat gct gtc ctc aat gct gga gct gga gag gat aat ctg gag ttc		1097	
Ile Asn Ala Val Leu Asn Ala Gly Ala Gly Glu Asp Asn Leu Glu Phe			
285	290	295	
cgc cta cat cta cgg tat gaa ttc ctg atg ctg ggt ata cag cct gtg		1145	
Arg Leu His Leu Arg Tyr Glu Phe Leu Met Leu Gly Ile Gln Pro Val			
300	305	310	
att gac aag ctc cgg caa cat gaa aat gcc atc ctg gac aaa cat tta		1193	
Ile Asp Lys Leu Arg Gln His Glu Asn Ala Ile Leu Asp Lys His Leu			
315	320	325	
gac ttc ttc gag atg gtg cgg aat gag gat gac ctg gag cta gcc agg		1241	
Asp Phe Phe Glu Met Val Arg Asn Glu Asp Asp Leu Glu Leu Ala Arg			
330	335	340	
agg ttt gac atg gtc cac atc gac acc aag agt gct tcc cag atg ttt		1289	
Arg Phe Asp Met Val His Ile Asp Thr Lys Ser Ala Ser Gln Met Phe			
345	350	355	360
gag ttg atc cac aag aag ctg aag tac acg gag gcc tac ccc tgc ctg		1337	
Glu Leu Ile His Lys Lys Leu Lys Tyr Thr Glu Ala Tyr Pro Cys Leu			
365	370	375	
ctc tct gtg ctg cac cac tgc ctg cag atg ccc tac aaa cgg aac ggt		1385	

Leu Ser Val Leu His His Cys Leu Gln Met Pro Tyr Lys Arg Asn Gly			
380	385	390	
ggc tac ttc cag cag tgg cag ctc ctg gac cgc atc ctc cag cag att Gly Tyr Phe Gln Gln Trp Gln Leu Leu Asp Arg Ile Leu Gln Gln Ile		1433	
395	400	405	
gtc ctc cag gat gag cgg ggt gtg gac cct gac ctg gct ccc ttg gag Val Leu Gln Asp Glu Arg Gly Val Asp Pro Asp Leu Ala Pro Leu Glu		1481	
410	415	420	
aac ttc aat gtc aag aac atc gtc aac atg ctc atc aac gag aat gaa Asn Phe Asn Val Lys Asn Ile Val Asn Met Leu Ile Asn Glu Asn Glu		1529	
425	430	440	
gtg aaa cag tgg cga gac cag gca gag aag ttc cgg aaa gaa cac atg Val Lys Gln Trp Arg Asp Gln Ala Glu Lys Phe Arg Lys Glu His Met		1577	
445	450	455	
gag ctt gtg agc cgt ctg gag agg aag gag cgg gaa tgc gag aca aag Glu Leu Val Ser Arg Leu Glu Arg Lys Glu Arg Glu Cys Glu Thr Lys		1625	
460	465	470	
aca ttg gag aag gaa gag atg atg cgg cct ctg aac aaa atg aag gac Thr Leu Glu Lys Glu Met Met Arg Pro Leu Asn Lys Met Lys Asp		1673	
475	480	485	
aag ctg gcc cgg gag tcc cag gag ctg cgc cag gct cgg gga caa gtg Lys Leu Ala Arg Glu Ser Gln Glu Leu Arg Gln Ala Arg Gly Gln Val		1721	
490	495	500	
gca gag ctg gta gcc cag ctc agt gaa ctc tca aca ggc cct gta tct Ala Glu Leu Val Ala Gln Leu Ser Glu Leu Ser Thr Gly Pro Val Ser		1769	
505	510	515	520
tcc cca cca ccc cct ggg ggc cca ctc acc ttg tct tcc tca atg aca Ser Pro Pro Pro Pro Gly Gly Pro Leu Thr Leu Ser Ser Ser Met Thr		1817	
525	530	535	
acc aat gac ctg cct cca ccc cct cct ctg ccc ttt gcc tgt tgt Thr Asn Asp Leu Pro Pro Pro Pro Pro Leu Pro Phe Ala Cys Cys		1865	
540	545	550	
ccc cct ccc cca cca ccc ctt cct ccc ggg gga ccc ccg act ccc Pro Pro Pro Pro Pro Pro Leu Pro Pro Gly Gly Pro Pro Thr Pro		1913	
555	560	565	
cca ggt gcc cca cct tgc ctc ggc atg ggc ctg ccc ctc cct cag gac Pro Gly Ala Pro Pro Cys Leu Gly Met Gly Leu Pro Leu Pro Gln Asp		1961	
570	575	580	
ccc tac ccc agc agt gac gtc cca ctc agg aaa aag cgt gtc ccc cag Pro Tyr Pro Ser Ser Asp Val Pro Leu Arg Lys Lys Arg Val Pro Gln		2009	
585	590	595	600
cct tct cac cca ctg aag tcc ttc aac tgg gtg aag ctg aat gag gag Pro Ser His Pro Leu Lys Ser Phe Asn Trp Val Lys Leu Asn Glu Glu		2057	
605	610	615	
cgt gtc cct ggc acc gta tgg aat gag att gat gac atg cag gta ttt Arg Val Pro Gly Thr Val Trp Asn Glu Ile Asp Asp Met Gln Val Phe		2105	
620	625	630	
cgg atc ctg gac cta gag gat ttt gaa aaa atg ttt tca gcc tac cag		2153	

Arg Ile Leu Asp Leu Glu Asp Phe Glu Lys Met Phe Ser Ala Tyr Gln		
635	640	645
agg cac cag gag ctg ata act aat cct tct cag cag aaa gag ctg ggc		2201
Arg His Gln Glu Leu Ile Thr Asn Pro Ser Gln Gln Lys Glu Leu Gly		
650	655	660
tcc act gaa gac ata tac ctg gct tcc cgc aag gtc aaa gag ctg tcg		2249
Ser Thr Glu Asp Ile Tyr Leu Ala Ser Arg Lys Val Lys Glu Leu Ser		
665	670	675
680		
gtc att gat ggc cggttggagggcccaa aac tgc atc atc ctt ctt tcc aag		2297
Val Ile Asp Gly Arg Arg Ala Gln Asn Cys Ile Ile Leu Leu Ser Lys		
685	690	695
ttg aag ctt tct aac gag gag atc cggttggagggccatc aag atg gat		2345
Leu Lys Leu Ser Asn Glu Glu Ile Arg Gln Ala Ile Leu Lys Met Asp		
700	705	710
gag cag gag gac ctt gct aag gac atg ctg gag cag ctc ctc aag ttc		2393
Glu Gln Glu Asp Leu Ala Lys Asp Met Leu Glu Gln Leu Leu Lys Phe		
715	720	725
atc cca gag aag agt gac att gac ctc ctg gag gag cac aag cat gaa		2441
Ile Pro Glu Lys Ser Asp Ile Asp Leu Leu Glu Glu His Lys His Glu		
730	735	740
att gag cggttggatcgctgttgcgttgcgttat gaa atg agc agg		2489
Ile Glu Arg Met Ala Arg Ala Asp Arg Phe Leu Tyr Glu Met Ser Arg		
745	750	755
760		
att gac cac tac cag cag cga ctg caa gcc ctc ttc ttc aag aag aaa		2537
Ile Asp His Tyr Gln Gln Arg Leu Gln Ala Leu Phe Phe Lys Lys Lys		
765	770	775
ttc cag gag cggttggctgttgggatcgttgcgttgcgttat gaa atg agc agg		2585
Phe Gln Glu Arg Leu Ala Glu Ala Lys Pro Lys Val Glu Ala Ile Leu		
780	785	790
ttg gcc tcc cggttggatcgttgcgttgcgttat gaa atg agc agg		2633
Leu Ala Ser Arg Glu Leu Val Arg Ser Lys Arg Leu Arg Gln Met Leu		
795	800	805
gag gtc atc cta gcc ata ggc aac ttc atg aac aaa ggg cag cgt ggg		2681
Glu Val Ile Leu Ala Ile Gly Asn Phe Met Asn Lys Gly Gln Arg Gly		
810	815	820
ggc gcc tac ggg ttc cggttggatcgttgcgttgcgttat gaa atg agc agg		2729
Gly Ala Tyr Gly Phe Arg Val Ala Ser Leu Asn Lys Ile Ala Asp Thr		
825	830	835
840		
aag tcc agc atc gac aga aac atc tct ctg ctc cat tac ctg atc atg		2777
Lys Ser Ser Ile Asp Arg Asn Ile Ser Leu Leu His Tyr Leu Ile Met		
845	850	855
atc ctg gag aag cat ttt cct gat att cta aac atg cct tca gag ctg		2825
Ile Leu Glu Lys His Phe Pro Asp Ile Leu Asn Met Pro Ser Glu Leu		
860	865	870
caa cat ctt cca gaa gcc gaa aaa gtc aac cta gca gaa ctg gag aag		2873
Gln His Leu Pro Glu Ala Ala Lys Val Asn Leu Ala Glu Leu Glu Lys		
875	880	885
gag gtg ggc aac ctc agg agg ggc ctg aga gcg gtg gag gtg gag ctg		2921

Glu Val Gly Asn Leu Arg Arg	Gly Leu Arg Ala Val Glu Val Glu Leu		
890	895	900	
gag tat cag agg cgc cag gta cggttccggcaggcccagt gac aag ttt gtc cct			2969
Glu Tyr Gln Arg Arg Gln Val Arg Glu Pro Ser Asp Lys Phe Val Pro			
905	910	915	920
gtc atg agc gac ttc atc acg gtgttccggcaggcccagt gac ttc tcc gag ctg			3017
Val Met Ser Asp Phe Ile Thr Val Ser Ser Phe Ser Phe Ser Glu Leu			
925	930	935	
gag gac cag cta aat gag gcc agg gac aag ttc gcc aag gcc ttg atg			3065
Glu Asp Gln Leu Asn Glu Ala Arg Asp Lys Phe Ala Lys Ala Leu Met			
940	945	950	
cac ttc ggg gag cat gac agc aag atg cag cca gac gaa ttc ttt ggc			3113
His Phe Gly Glu His Asp Ser Lys Met Gln Pro Asp Glu Phe Phe Gly			
955	960	965	
atc ttt gat acc ttc ttg cag gcc ttc tca gag gcc cgg cag gat cta			3161
Ile Phe Asp Thr Phe Leu Gln Ala Phe Ser Glu Ala Arg Gln Asp Leu			
970	975	980	
gag gcc atg agg agg aag gag gag gag cgg cgg cgc atg			3209
Glu Ala Met Arg Arg Lys Glu Glu Glu Arg Arg Ala Arg Met			
985	990	995	1000
gaa gcc atg ctg aag gag cag agg gaa cgt gag cgg tgg cag cgg cag			3257
Glu Ala Met Leu Lys Glu Gln Arg Glu Arg Trp Gln Arg Gln			
1005	1010	1015	
cggttccggcaggcccagt gac aag gac			3305
Arg Lys Val Leu Ala Gly Ser Ser Leu Glu Glu Gly Glu Phe			
1020	1025	1030	
gat gac ctg gtgttccggcaggcccagt gtc ttc gac aag gac			3353
Asp Asp Leu Val Ser Ala Leu Arg Ser Gly Glu Val Phe Asp Lys Asp			
1035	1040	1045	
ttatgc aag ctc aag cgc agc cgc aag cga tca ggg agc cag gcc ctg			3401
Leu Cys Lys Leu Lys Arg Ser Arg Lys Arg Ser Gly Ser Gln Ala Leu			
1050	1055	1060	
gaa gtt acc cgg gag cgg gca ata aac cgg cta aat tat tga cctgggg			3450
Glu Val Thr Arg Glu Arg Ala Ile Asn Arg Leu Asn Tyr *			
1065	1070	1075	
aactagccac acaggaggcc gggagacagg gactggtagag aatggggctg agtggaggag			3510
gtggtagatat tttaaccatt tggtgttgg tttagagcct tggcgtgggt cctggatgg			
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tccagagtcc ctgtgttagca cggggagcaa tggatggagg agccctgag agggaatctg			3810
gtgagggaat ccagactccc ttctctcaag gggaggctca acagaacatt gacctggggg			3870
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			3990

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 tgggaaggg tctgttccag cctctcccta ctcccacccc atttccacca actggggAAC 6090  
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 ggcagtggag cgagagatgc agctgatctt cttagatcta aagcattttc cacggaggat 180  
 ggtggagagc caggtgtgga cagctcagtc cctctgtctg tggtgtcctt tcacctggc 240  
 agttcgggc ctgggaatgt gcac atg acc cag ggg gag aag gag cgg ctg 291  
 Met Thr Gln Gly Glu Lys Glu Arg Leu  
 1 5  
 cg gtc ctg ctc acc ctt agt ttg ggg ctg ggg cct tca gcc cac act 339  
 Arg Val Leu Leu Thr Leu Ser Leu Gly Leu Gly Pro Ser Ala His Thr  
 10 15 20 25  
 gac ggg gta gga ggg ctg cat tca agt gtc ccc ata gcc ctt ccc ttc 387  
 Asp Gly Val Gly Gly Leu His Ser Ser Val Pro Ile Ala Leu Pro Phe  
 30 35 40  
 cca acc agg atg ctg gca ggt caa ctc gag gcc agg gac ccc aaa gag 435  
 Pro Thr Arg Met Leu Ala Gly Gln Leu Glu Ala Arg Asp Pro Lys Glu  
 45 50 55  
 ggc acc cac cca gag gac ccg tgc cca gga gct ggg gct gtc atg gag 483  
 Gly Thr His Pro Glu Asp Pro Cys Pro Gly Ala Gly Ala Val Met Glu  
 60 65 70  
 aag aca gct gtg gca gcc gag gtt ctc acg gag gac tgc aac act ggg 531  
 Lys Thr Ala Val Ala Ala Glu Val Leu Thr Glu Asp Cys Asn Thr Gly  
 75 80 85  
 gag atg cca cca tta cag cag cag atc atc aga ctc cac caa gag ctt 579  
 Glu Met Pro Pro Leu Gln Gln Ile Ile Arg Leu His Gln Glu Leu  
 90 95 100 105

ggg aga cag aag tct ctg tgg gct gat gtt cat gga aaa ctc cgg agt Gly Arg Gln Lys Ser Leu Trp Ala Asp Val His Gly Lys Leu Arg Ser	110	115	120	627	
cat ata gat gct ttg agg gag cag aac atg gag ctc cga gaa aag ctg His Ile Asp Ala Leu Arg Glu Gln Asn Met Glu Leu Arg Glu Lys Leu	125	130	135	675	
aga gct ctg cag ctg cag cg <sup>g</sup> tgg aaa gcc agg aag aaa tct gca gc <sup>g</sup> Arg Ala Leu Gln Leu Gln Arg Trp Lys Ala Arg Lys Lys Ser Ala Ala	140	145	150	723	
tcc cca cac gc <sup>g</sup> ggg caa gaa tcg cac act ctg gca ttg gaa cct gct Ser Pro His Ala Gly Gln Glu Ser His Thr Leu Ala Leu Glu Pro Ala	155	160	165	771	
ttt gga aaa att tca cct ctg tca gct gat gaa gag aca ata ccc aaa Phe Gly Lys Ile Ser Pro Leu Ser Ala Asp Glu Glu Thr Ile Pro Lys	170	175	180	185	819
tac gct ggc cac aag aat cag agt gcc act ctc ctg gga caa aga tcg Tyr Ala Gly His Lys Asn Gln Ser Ala Thr Leu Leu Gly Gln Arg Ser	190	195	200	867	
tca tct aac aat tca gct cct cca aag cca atg agt tta aag ata gaa Ser Ser Asn Asn Ser Ala Pro Pro Lys Pro Met Ser Leu Lys Ile Glu	205	210	215	915	
aga att agc tcg tgg aaa aca cca cca cag gaa aat aga gat aaa aat Arg Ile Ser Ser Trp Lys Thr Pro Pro Gln Glu Asn Arg Asp Lys Asn	220	225	230	963	
ctt tcc agg aga cgt caa gac aga aga gca aca cct act gga agg cca Leu Ser Arg Arg Arg Gln Asp Arg Arg Ala Thr Pro Thr Gly Arg Pro	235	240	245	1011	
act ccc tgt gca gag aga cg <sup>g</sup> ggg ggt gtc tga agatggaa aggtggcc <sup>c</sup> Thr Pro Cys Ala Glu Arg Arg Gly Gly Val *	250	255	260	1062	
ggcacacttgt gtcactctac actggccc <sup>c</sup> tggaaaattc agattcagat aaagtccac				1122	
tttagtgtctaa taaaagtact caatttgtta ttcaaaaaaaaaaaaa				1167	

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<220>  
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<400> 576

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agtataaata ataaaagcaag aaaggcagat gcatttggct ggctcagtgg acttctgaat 180  
gtactgtgag tatgagacct tcccttccaa aagatccgggt gcttcttgtc tattccacac 240

gaagcttgct tcagatcgag ggaggatgta gcactgtcca caggtgggtg tatgaaagga	300
aaattctaga gatatctccaa aatccgggtc tactactcaa caggatattc ttcaaggaaa	360
atg aac ccc aca cta ggc ctg gcc att ttt ctg gct gtt ctc ctc acg Met Asn Pro Thr Leu Gly Leu Ala Ile Phe Leu Ala Val Leu Leu Thr	408
1 5 10 15	
gtg aaa ggt ctt cta aag ccg agc ttc tca cca agg aat tat aaa gct Val Lys Gly Leu Leu Lys Pro Ser Phe Ser Pro Arg Asn Tyr Lys Ala	456
20 25 30	
ttg agc gag gtc caa gga tgg aag caa agg atg gca gcc aag gag ctt Leu Ser Glu Val Gln Gly Trp Lys Gln Arg Met Ala Ala Lys Glu Leu	504
35 40 45	
gca agg cag aac atg gac tta ggc ttt aag ctg ctc aag aag ctg gcc Ala Arg Gln Asn Met Asp Leu Gly Phe Lys Leu Leu Lys Lys Leu Ala	552
50 55 60	
ttt tac aac cct ggc agg aac atc ttc cta tcc ccc ttg agc atc tct Phe Tyr Asn Pro Gly Arg Asn Ile Phe Leu Ser Pro Leu Ser Ile Ser	600
65 70 75 80	
aca gct ttc tcc atg ctg tgc ctg ggt gcc cag gac agc acc ctg gac Thr Ala Phe Ser Met Leu Cys Leu Gly Ala Gln Asp Ser Thr Leu Asp	648
85 90 95	
gag atc aag cag ggg ttc aac ttc aga aag atg cca gaa aaa gat ctt Glu Ile Lys Gln Gly Phe Asn Phe Arg Lys Met Pro Glu Lys Asp Leu	696
100 105 110	
cat gag ggc ttc cat tac atc atc cac gag ctg acc cag aag acc cag His Glu Gly Phe His Tyr Ile Ile His Glu Leu Thr Gln Lys Thr Gln	744
115 120 125	
gac ctc aaa ctg agc att ggg aac acg ctg ttc att gac cag agg ctg Asp Leu Lys Leu Ser Ile Gly Asn Thr Leu Phe Ile Asp Gln Arg Leu	792
130 135 140	
cag cca cag cgt aag ttt ttg gaa gat gcc aag aac ttt tac agt gcc Gln Pro Gln Arg Lys Phe Leu Glu Asp Ala Lys Asn Phe Tyr Ser Ala	840
145 150 155 160	
gaa acc atc ctt acc aac ttt cag aat ttg gaa atg gct cag aag cag Glu Thr Ile Leu Thr Asn Phe Gln Asn Leu Glu Met Ala Gln Lys Gln	888
165 170 175	
atc aat gac ttt atc agt caa aaa acc cat ggg aaa att aac aac ctg Ile Asn Asp Phe Ile Ser Gln Lys Thr His Gly Lys Ile Asn Asn Leu	936
180 185 190	
atc gag aat ata gac ccc ggc act gtg atg ctt gca aat tat att Ile Glu Asn Ile Asp Pro Gly Thr Val Met Leu Leu Ala Asn Tyr Ile	984
195 200 205	
ttc ttt cga gcc agg tgg aaa cat gag ttt gat cca aat gta act aaa Phe Phe Arg Ala Arg Trp Lys His Glu Phe Asp Pro Asn Val Thr Lys	1032
210 215 220	
gag gaa gat ttc ttt ctg gag aaa aac agt tca gtc aag gtg ccc atg Glu Glu Asp Phe Phe Leu Glu Lys Asn Ser Ser Val Val Lys Val Pro Met	1080
225 230 235 240	

atg ttc cgt agt ggc ata tac caa gtt ggc tat gac gat aag ctc tct Met Phe Arg Ser Gly Ile Tyr Gln Val Gly Tyr Asp Asp Lys Leu Ser 245 250 255	1128
tgc acc atc ctg gaa ata ccc tac cag aaa aat atc aca gcc atc ttc Cys Thr Ile Leu Glu Ile Pro Tyr Gln Lys Asn Ile Thr Ala Ile Phe 260 265 270	1176
atc ctt cct gat gag ggc aag ctg aag cac ttg gag aag gga ttg cag Ile Leu Pro Asp Glu Gly Lys Leu Lys His Leu Glu Lys Gly Leu Gln 275 280 285	1224
gtg gac act ttc tcc aga tgg aaa aca tta ctg tca cgc agg gtc gta Val Asp Thr Phe Ser Arg Trp Lys Thr Leu Leu Ser Arg Arg Val Val 290 295 300	1272
gac gtg tct gta ccc aga ctc cac atg acg ggc acc ttc gac ctg aag Asp Val Ser Val Pro Arg Leu His Met Thr Gly Thr Phe Asp Leu Lys 305 310 315 320	1320
aag act ctc tcc tac ata ggt gtc tcc aaa atc ttt gag gaa cat ggt Lys Thr Leu Ser Tyr Ile Gly Val Ser Lys Ile Phe Glu Glu His Gly 325 330 335	1368
gat ctc acc aag atc gcc cct cat cgc agc ctg aaa gtg ggc gag gct Asp Leu Thr Lys Ile Ala Pro His Arg Ser Leu Lys Val Gly Glu Ala 340 345 350	1416
gtg aac aag gct gag ctg aag atg gat gag agg ggt acg gaa ggg gcc Val Asn Lys Ala Glu Leu Lys Met Asp Glu Arg Gly Thr Glu Gly Ala 355 360 365	1464
gct ggc acc gga gca cag act ctg ccc atg gag aca cca ctc gtc gtc Ala Gly Thr Gly Ala Gln Thr Leu Pro Met Glu Thr Pro Leu Val Val 370 375 380	1512
aag ata gac aaa ccc tat ctg ctg att tac agc gag aaa ata cct Lys Ile Asp Lys Pro Tyr Leu Leu Ile Tyr Ser Glu Lys Ile Pro 385 390 395 400	1560
tcc gtg ctc ttc ctg gga aag att gtt aac cct att gga aaa taa agg Ser Val Leu Phe Leu Gly Lys Ile Val Asn Pro Ile Gly Lys * 405 410 415	1608
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<212> DNA  
<213> Homo sapiens

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<222> (301)..(5676)

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	120

gatgatattg acagagaact gagtgagggc cagggggcag ctgccatccc aatttgttagc 180  
 acatccctcg agacagaaaac agcatccact gtgggatctg aagaaaccat catccagacc 240  
 cttccgtag tcactcaggg gacagcaacc cgaagtagga agacagccca aaagactgca 300  
 atg cag tgc tgc ttg gag tat gtc caa cag ttt ctt acc aga ctt atc 348  
 Met Gln Cys Cys Leu Glu Tyr Val Gln Gln Phe Leu Thr Arg Leu Ile  
 1 5 10 15  
 aac ctc tac atc att cag aat aac tct ttt tct cag tct ttg gct aca 396  
 Asn Leu Tyr Ile Ile Gln Asn Asn Ser Phe Ser Gln Ser Leu Ala Thr  
 20 25 30  
 gaa cat caa ggg gat ctt ggt cga gaa caa gga gag act tca aaa tgg 444  
 Glu His Gln Gly Asp Leu Gly Arg Glu Gln Gly Glu Thr Ser Lys Trp  
 35 40 45  
 gac aga aat tca caa gga gat gta aaa gag aaa aac ata agt aaa caa 492  
 Asp Arg Asn Ser Gln Gly Asp Val Lys Glu Lys Asn Ile Ser Lys Gln  
 50 55 60  
 aaa act tct aaa gaa tac ctg tct gcc ttc ctt gct gcc tgt cag ctc 540  
 Lys Thr Ser Lys Glu Tyr Leu Ser Ala Phe Leu Ala Ala Cys Gln Leu  
 65 70 75 80  
 ttc cta gag tgc tca agt ttc cca gtt tac att gct gag ggg aac cat 588  
 Phe Leu Glu Cys Ser Ser Phe Pro Val Tyr Ile Ala Glu Gly Asn His  
 85 90 95  
 aca tca gag tta cgt tct gaa aaa ttg gag act gac tgt gag cat gtg 636  
 Thr Ser Glu Leu Arg Ser Glu Lys Leu Glu Thr Asp Cys Glu His Val  
 100 105 110  
 cag cct cca cag tgg ctc cag act ctg atg aat gct tgc agc caa gca 684  
 Gln Pro Pro Gln Trp Leu Gln Thr Leu Met Asn Ala Cys Ser Gln Ala  
 115 120 125  
 agt gat ttc agt gtt cag agt gtt gct att tca cta gtt atg gac ctg 732  
 Ser Asp Phe Ser Val Gln Ser Val Ala Ile Ser Leu Val Met Asp Leu  
 130 135 140  
 gtg gga ctg aca cag tct gtg gcc atg gtc act ggg gaa aac atc aac 780  
 Val Gly Leu Thr Gln Ser Val Ala Met Val Thr Gly Glu Asn Ile Asn  
 145 150 155 160  
 agt gta gag cct gca caa ccc tta agt cca aac cag gga aga gta gct 828  
 Ser Val Glu Pro Ala Gln Pro Leu Ser Pro Asn Gln Gly Arg Val Ala  
 165 170 175  
 gtg gtt att aga cct ccc ctc act cag ggc aat ctg agg tac ata gct 876  
 Val Val Ile Arg Pro Pro Leu Thr Gln Gly Asn Leu Arg Tyr Ile Ala  
 180 185 190  
 gag aag act gaa ttt ttc aag cat gta gct tta aca ttg tgg gac cag 924  
 Glu Lys Thr Glu Phe Phe Lys His Val Ala Leu Thr Leu Trp Asp Gln  
 195 200 205  
 ttg gga gat ggg aca cct cag cat cac cag aag agt gtg gaa cta ttt 972  
 Leu Gly Asp Gly Thr Pro Gln His His Gln Lys Ser Val Glu Leu Phe  
 210 215 220  
 tat caa tta cat aac tta gtt cct tct tct agc atc tgt gag gat gtt 1020  
 Tyr Gln Leu His Asn Leu Val Pro Ser Ser Ile Cys Glu Asp Val

225	230	235	240	
ata agt cag cag tta acc cat aaa gat aag aaa ata agg atg gaa gca Ile Ser Gln Gln Leu Thr His Lys Asp Lys Lys Ile Arg Met Glu Ala 245		250	255	1068
cat gcc aag ttt gca gtt ctt tgg cat cta acg aga gat ctc cat ata His Ala Lys Phe Ala Val Leu Trp His Leu Thr Arg Asp Leu His Ile 260		265	270	1116
aat aaa tct tca tct ttt gta cgt tct ttt gac agg tca ctg ttc atc Asn Lys Ser Ser Ser Phe Val Arg Ser Phe Asp Arg Ser Leu Phe Ile 275		280	285	1164
atg tta gat agc ctt aac agt ctc gat ggt tct act agc tct gtg gga Met Leu Asp Ser Leu Asn Ser Leu Asp Gly Ser Thr Ser Ser Val Gly 290		295	300	1212
caa gcc tgg ctg aac caa gtc cta caa aga cat gat att gca cga gtt Gln Ala Trp Leu Asn Gln Val Leu Gln Arg His Asp Ile Ala Arg Val 305		310	315	1260
ttg gaa cca ttg cta ttg ctc ctg ctt cat cca aaa act cag agg gtt Leu Glu Pro Leu Leu Leu Leu His Pro Lys Thr Gln Arg Val 325		330	335	1308
tca gta cag cgt gta caa gca gaa cgt tat tgg aat aag tct ccc tgt Ser Val Gln Arg Val Gln Ala Glu Arg Tyr Trp Asn Lys Ser Pro Cys 340		345	350	1356
tat cca gga gag gag agt gac aag cat ttc atg caa aat ttt gcc tgc Tyr Pro Gly Glu Ser Asp Lys His Phe Met Gln Asn Phe Ala Cys 355		360	365	1404
agc aat gtg agc caa gta caa ctc atc aca tca aaa gga aat ggt gaa Ser Asn Val Ser Gln Val Gln Leu Ile Thr Ser Lys Gly Asn Gly Glu 370		375	380	1452
aag cca ctt acc atg gat gaa ata gag aac ttt agt ctc act gtg aat Lys Pro Leu Thr Met Asp Glu Ile Glu Asn Phe Ser Leu Thr Val Asn 385		390	395	1500
cca tta agt gac aga ctt tcc ctc cta agt acc agc agt gag aca att Pro Leu Ser Asp Arg Leu Ser Leu Leu Ser Thr Ser Ser Glu Thr Ile 405		410	415	1548
cca atg gtt gtg tct gat ttt gat ctt cca gac caa cag ata gaa ata Pro Met Val Val Ser Asp Phe Asp Leu Pro Asp Gln Gln Ile Glu Ile 420		425	430	1596
ctt cag agt tct gac tcg gga tgt tca cag tcc tct gct ggg gac aac Leu Gln Ser Ser Asp Ser Gly Cys Ser Gln Ser Ser Ala Gly Asp Asn 435		440	445	1644
ttg agt tac gaa gtt gat cct gaa acc gtg aat gcc caa gag gat tct Leu Ser Tyr Glu Val Asp Pro Glu Thr Val Asn Ala Gln Glu Asp Ser 450		455	460	1692
caa atg ccc aag gaa agc tcc cca gat gat gat gtt caa cag gta gta Gln Met Pro Lys Glu Ser Ser Pro Asp Asp Asp Val Gln Gln Val Val 465		470	475	1740
ttt gac ctg ata tgt aaa gtt gta agt ggc ctc gaa gtg gaa tct gca Phe Asp Leu Ile Cys Lys Val Val Ser Gly Leu Glu Val Glu Ser Ala 480				1788

485	490	495	
tca gtt aca tct caa tta gaa att gaa gct atg ccc cca aag tgc agt Ser Val Thr Ser Gln Leu Glu Ile Glu Ala Met Pro Pro Lys Cys Ser 500	505	510	1836
gat ata gat cca gat gaa gag acg att aaa att gaa gat gac tcc att Asp Ile Asp Pro Asp Glu Glu Thr Ile Lys Ile Glu Asp Asp Ser Ile 515	520	525	1884
cga cag agt cag aat gct ttg ctg agt aat gaa agt tct cag ttt ctg Arg Gln Ser Gln Asn Ala Leu Leu Ser Asn Glu Ser Ser Gln Phe Leu 530	535	540	1932
tct gtg tct gca gag gga ggc cat gag tgt gtg gca aat gga atc tcc Ser Val Ser Ala Glu Gly Gly His Glu Cys Val Ala Asn Gly Ile Ser 545	550	555	1980
agg aat agc tcc tca cct tgt att tca gga acc aca cac act ctt cat Arg Asn Ser Ser Pro Cys Ile Ser Gly Thr Thr His Thr Leu His 565	570	575	2028
gac tct tct gtt gct tcc ata gaa acc aaa tct aga caa agg agt cac Asp Ser Ser Val Ala Ser Ile Glu Thr Lys Ser Arg Gln Arg Ser His 580	585	590	2076
agt agt att caa ttc agc ttc aaa gaa aaa tta tca gaa aaa gtt tcg Ser Ser Ile Gln Phe Ser Phe Lys Glu Lys Leu Ser Glu Lys Val Ser 595	600	605	2124
gag aag gaa aca ata gtt aag gag tca ggt aaa caa cca gga gca aaa Glu Lys Glu Thr Ile Val Lys Glu Ser Gly Lys Gln Pro Gly Ala Lys 610	615	620	2172
cct aaa gta aaa ctt gcc aga aaa aag gat gat gac aag aaa aaa tct Pro Lys Val Lys Leu Ala Arg Lys Lys Asp Asp Lys Lys Lys Ser 625	630	635	2220
tca aat gaa aaa ctc aaa caa acc agt gta ttc ttc agt gat ggt ctg Ser Asn Glu Lys Leu Lys Gln Thr Ser Val Phe Phe Ser Asp Gly Leu 645	650	655	2268
gat tta gag aac tgg tat agc tgt gga gag gga gac att tct gaa att Asp Leu Glu Asn Trp Tyr Ser Cys Gly Glu Gly Asp Ile Ser Glu Ile 660	665	670	2316
gag agt gac atg ggt tct cca gga tct cga aaa tct ccc aat ttc aac Glu Ser Asp Met Gly Ser Pro Gly Ser Arg Lys Ser Pro Asn Phe Asn 675	680	685	2364
att cat cct ctc tat caa cat gtg ctc ctg tat ctc cag ttg tat gat Ile His Pro Leu Tyr Gln His Val Leu Leu Tyr Leu Gln Leu Tyr Asp 690	695	700	2412
tca tcc agg act ttg tat gct ttc tct gcc atc aaa gcc atc ttg aaa Ser Ser Arg Thr Leu Tyr Ala Phe Ser Ala Ile Lys Ala Ile Leu Lys 705	710	715	2460
act aac cct ata gct ttt gta aat gcc att tca act act agt gta aat Thr Asn Pro Ile Ala Phe Val Asn Ala Ile Ser Thr Thr Ser Val Asn 725	730	735	2508
aat gca tat act cct cag ttg tct ctc ctt cag aat cta ttg gcc aga Asn Ala Tyr Thr Pro Gln Leu Ser Leu Leu Gln Asn Leu Ala Arg			2556

740	745	750														
cac	cggtt	atg	2604													
His	Arg	Ile	Ser	Val	Met	Gly	Lys	Asp	Phe	Tyr	Ser	His	Ile	Pro	Val	
755	760	765														
gac	tca	aat	cat	aac	ttc	cggtt	atg	tct	atg	tac	ata	gaa	att	.ctt	att	2652
Asp	Ser	Asn	His	Asn	Phe	Arg	Ser	Ser	Met	Tyr	Ile	Glu	Ile	Leu	Ile	
770	775	780														
tct	ctc	tgc	tta	tat	tac	atg	cgt	agc	cat	tac	cca	act	cat	gtc	aag	2700
Ser	Leu	Cys	Leu	Tyr	Tyr	Met	Arg	Ser	His	Tyr	Pro	Thr	His	Val	Lys	
785	790	795	800													
gtt	act	gca	caa	gat	tta	ata	ggc	aat	cga	aac	atg	caa	atg	atg	agc	2748
Val	Thr	Ala	Gln	Asp	Leu	Ile	Gly	Asn	Arg	Asn	Met	Gln	Met	Met	Ser	
805	810	815														
ata	gaa	att	ctg	aca	cta	ctc	ttc	act	gag	ctg	gca	aaa	gta	ata	gaa	2796
Ile	Glu	Ile	Leu	Thr	Leu	Leu	Phe	Thr	Glu	Leu	Ala	Lys	Val	Ile	Glu	
820	825	830														
agc	tca	gcg	aag	ggt	ttc	cct	agt	ttt	att	tct	gat	atg	tta	tct	aag	2844
Ser	Ser	Ala	Lys	Gly	Phe	Pro	Ser	Phe	Ile	Ser	Asp	Met	Leu	Ser	Lys	
835	840	845														
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Cys	Lys	Val	Gln	Lys	Val	Ile	Leu	His	Cys	Leu	Leu	Ser	Ser	Ile	Phe	
850	855	860														
agt	gct	cag	aaa	tgg	cat	agt	gaa	aaa	atg	gca	ggt	aag	aac	ctg	gtt	2940
Ser	Ala	Gln	Lys	Trp	His	Ser	Glu	Lys	Met	Ala	Gly	Lys	Asn	Leu	Val	
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gct	gtg	gaa	gaa	ggt	ttc	tca	gag	gac	agg	ctt	att	aat	ttc	tca	gag	2988
Ala	Val	Glu	Glu	Gly	Phe	Ser	Glu	Asp	Ser	Leu	Ile	Asn	Phe	Ser	Glu	
885	890	895														
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Asp	Glu	Phe	Asp	Asn	Gly	Ser	Thr	Leu	Gln	Ser	Gln	Leu	Leu	Lys	Val	
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Leu	Gln	Arg	Leu	Ile	Val	Leu	Glu	His	Arg	Val	Met	Thr	Ile	Pro	Glu	
915	920	925														
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Glu	Asn	Glu	Thr	Gly	Phe	Asp	Phe	Val	Val	Ser	Asp	Leu	Glu	His	Ile	
930	935	940														
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Ser	Pro	His	Gln	Pro	Met	Thr	Ser	Leu	Gln	Tyr	Leu	His	Ala	Gln	Pro	
945	950	955	960													
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Ile	Thr	Cys	Gln	Gly	Met	Phe	Leu	Cys	Ala	Val	Ile	Arg	Ala	Leu	His	
965	970	975														
cag	cac	tgt	gca	tgt	aag	atg	cac	caa	tgg	att	ggt	tta	atc	aca	3276	
Gln	His	Cys	Ala	Cys	Lys	Met	His	Pro	Gln	Trp	Ile	Gly	Leu	Ile	Thr	
980	985	990														
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aaa tac gaa aca gga tta tct gat agt agg cct ctg tgg atg gca tca Lys Tyr Glu Thr Gly Leu Ser Asp Ser Arg Pro Leu Trp Met Ala Ser 1025 1030 1035 1040			3420
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gca tct ctt acc act att aat ctt gga gct aca aag aac ttg aga caa Ala Ser Leu Thr Thr Ile Asn Leu Gly Ala Thr Lys Asn Leu Arg Gln 1125 1130 1135			3708
cag att ctt gaa ttg ttg ggc ccc att tca atg aat cat ggt gtt cac Gln Ile Leu Glu Leu Leu Gly Pro Ile Ser Met Asn His Gly Val His 1140 1145 1150			3756
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1285	1290	1295	
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1300	1305	1310	
ctg gaa cag aca aca tgg ctg cga aat ctt gaa gtt aag cct tct Leu Glu Gln Thr Thr Trp Leu Arg Arg Asn Leu Glu Val Lys Pro Ser			4284
1315	1320	1325	
ccc aaa ata atg gta gat gga acc aat ttg gaa tct gat gtt gaa gat Pro Lys Ile Met Val Asp Gly Thr Asn Leu Glu Ser Asp Val Glu Asp			4332
1330	1335	1340	
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1345	1350	1355	1360
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1365	1370	1375	
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1380	1385	1390	
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1395	1400	1405	
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1410	1415	1420	
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1445	1450	1455	
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1475	1480	1485	
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1490	1495	1500	
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1540		1545		1550
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1665		1670		1675
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1685		1690		1695
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1715		1720		1725
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1765

1770

1775

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gat gaa ttt gac aat ggc agc acg ttg cag tca caa ctt ctt aag gtg Asp Glu Phe Asp Asn Gly Ser Thr Leu Gln Ser Gln Leu Leu Lys Val 900                   905                   910	3036
ctt cag agg ctg att gtt cta gaa cac aga gta atg act att cct gaa Leu Gln Arg Leu Ile Val Leu Glu His Arg Val Met Thr Ile Pro Glu 915                   920                   925	3084
gag aat gaa aca ggt ttt gat ttt gtt gta tct gac tta gaa cac atc Glu Asn Glu Thr Gly Phe Asp Phe Val Val Ser Asp Leu Glu His Ile 930                   935                   940	3132
agt ccc cat caa ccc atg act tct ctt cag tat ttg cat gct cag cca Ser Pro His Gln Pro Met Thr Ser Leu Gln Tyr Leu His Ala Gln Pro 945                   950                   955                   960	3180
atc aca tgt caa ggc atg ttc ctc tgt gca gtg ata cga gct ttg cat Ile Thr Cys Gln Gly Met Phe Leu Cys Ala Val Ile Arg Ala Leu His 965                   970                   975	3228
cag cac tgt gca tgt aag atg cac cca caa tgg att ggt tta atc aca Gln His Cys Ala Cys Lys Met His Pro Gln Trp Ile Gly Leu Ile Thr 980                   985                   990	3276
tct act ctg cct tac atg gga aaa gtt ctg cag aga gtg gtt gtt tct Ser Thr Leu Pro Tyr Met Gly Lys Val Leu Gln Arg Val Val Ser 995                   1000                   1005	3324
gtg aca cta caa ctg tgc aga aat tta gat aat cta att cag cag tac Val Thr Leu Gln Leu Cys Arg Asn Leu Asp Asn Leu Ile Gln Gln Tyr 1010                 1015                 1020	3372
aaa tac gaa aca gga tta tct gat agt agg cct ctg tgg atg gca tca Lys Tyr Glu Thr Gly Leu Ser Asp Ser Arg Pro Leu Trp Met Ala Ser 1025                 1030                 1035                 1040	3420
att att cca cca gat atg att ctt act ctt ttg gaa ggg att aca gcc Ile Ile Pro Pro Asp Met Ile Leu Thr Leu Leu Glu Gly Ile Thr Ala 1045                 1050                 1055	3468
att atc cat tac tgt ttg ttg gat cca act aca cag tat cac caa ctt Ile Ile His Tyr Cys Leu Leu Asp Pro Thr Thr Gln Tyr His Gln Leu 1060                 1065                 1070	3516
ttg gtc agt gta gac cag aaa cac ttg ttt gaa gca cgc agt gga atc Leu Val Ser Val Asp Gln Lys His Leu Phe Glu Ala Arg Ser Gly Ile 1075                 1080                 1085	3564
ctc tca atc ctt cat atg atc atg tcc tct gtg aca ctg ctt tgg agc Leu Ser Ile Leu His Met Ile Met Ser Ser Val Thr Leu Leu Trp Ser 1090                 1095                 1100	3612
ata ctg cat caa gct gat tct tca gaa aag atg act att gcc gca tcc Ile Leu His Gln Ala Asp Ser Ser Glu Lys Met Thr Ile Ala Ala Ser 1105                 1110                 1115                 1120	3660

gca tct ctt acc act att aat ctt gga gct aca aag aac ttg aga caa Ala Ser Leu Thr Thr Ile Asn Leu Gly Ala Thr Lys Asn Leu Arg Gln	1125	1130	1135	3708
cag att ctt gaa ttg ttg ggc ccc att tca atg aat cat ggt gtt cac Gln Ile Leu Glu Leu Leu Gly Pro Ile Ser Met Asn His Gly Val His	1140	1145	1150	3756
ttt atg gct gcc att gca ttt gtg tgg aat gaa aga aga cag aat aaa Phe Met Ala Ala Ile Ala Phe Val Trp Asn Glu Arg Arg Gln Asn Lys	1155	1160	1165	3804
aca acc acc agg acc aag gtc att cct gca gcc agt gaa gaa cag ctt Thr Thr Thr Arg Thr Lys Val Ile Pro Ala Ala Ser Glu Glu Gln Leu	1170	1175	1180	3852
tta tta gtg gaa ttg gtt cgt tca atc agt gtc atg aga gca gaa act Leu Leu Val Glu Leu Val Arg Ser Ile Ser Val Met Arg Ala Glu Thr	1185	1190	1195	3900
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gcg tca ctg ttg ata ctt ctg aaa gac tct ata caa ctg agt ctt cca Ala Ser Leu Leu Ile Leu Leu Lys Asp Ser Ile Gln Leu Ser Leu Pro	1250	1255	1260	4092
gct cca ggg cag ttt ctt ata ctt ggg gtt ctg aat gag ttt att atg Ala Pro Gly Gln Phe Leu Ile Leu Gly Val Leu Asn Glu Phe Ile Met	1265	1270	1275	4140
aaa aac cct agt ttg gaa aat aaa aaa gac caa aga gac ctt cag gat Lys Asn Pro Ser Leu Glu Asn Lys Lys Asp Gln Arg Asp Leu Gln Asp	1285	1290	1295	4188
gta act cac aaa ata gtg gat gca att ggt gca att gct ggt tct tct Val Thr His Lys Ile Val Asp Ala Ile Gly Ala Ile Ala Gly Ser Ser	1300	1305	1310	4236
ctg gaa cag aca aca tgg ctg cga cga aat ctt gaa gtt aag cct tct Leu Glu Gln Thr Thr Trp Leu Arg Arg Asn Leu Glu Val Lys Pro Ser	1315	1320	1325	4284
ccc aaa ata atg gta gat gga acc aat ttg gaa tct gat gtt gaa gat Pro Lys Ile Met Val Asp Gly Thr Asn Leu Glu Ser Asp Val Glu Asp	1330	1335	1340	4332
atg tta tca cct gca atg gaa acc gca aac ata act cct tct gta tat Met Leu Ser Pro Ala Met Glu Thr Ala Asn Ile Thr Pro Ser Val Tyr	1345	1350	1355	4380
agt gtc cat gca ttg aca tta ctc tct gag gtt ttg gct cat ctt ttg Ser Val His Ala Leu Thr Leu Leu Ser Glu Val Leu Ala His Leu Leu	1365	1370	1375	4428

gat atg gtt ttc tat agt gat gaa aag gag cgg gtt att cct tta ctt Asp Met Val Phe Tyr Ser Asp Glu Lys Glu Arg Val Ile Pro Leu Leu 1380 1385 1390	4476
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gat ttg atg act cgt gta gca gtg gct caa agc agt tca ctt aat ctc Asp Leu Met Thr Arg Val Ala Val Ala Gln Ser Ser Leu Asn Leu 1425 1430 1435 1440	4620
ttt gca aac cgt gat gtg gag cta gaa cag aga gct atg ctt ctt aaa Phe Ala Asn Arg Asp Val Glu Leu Glu Gln Arg Ala Met Leu Leu Lys 1445 1450 1455	4668
aga tta gca ttt gct att ttt agc agt gaa att gac cag tac cag aaa Arg Leu Ala Phe Ala Ile Phe Ser Ser Glu Ile Asp Gln Tyr Gln Lys 1460 1465 1470	4716
tat ctt cca gat ata caa gag aga ttg gtt gag agt ctc cgt ttg cca Tyr Leu Pro Asp Ile Gln Glu Arg Leu Val Glu Ser Leu Arg Leu Pro 1475 1480 1485	4764
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gct gat gaa gat att tca cgg act tca ggg ccc tct gtg gct ggt ctg Ala Asp Glu Asp Ile Ser Arg Thr Ser Gly Pro Ser Val Ala Gly Leu 1540 1545 1550	4956
gag aca acg tac aca gga ggt aat ggc ttc tct act tca tat aac agc Glu Thr Thr Tyr Thr Gly Gly Asn Gly Phe Ser Thr Ser Tyr Asn Ser 1555 1560 1565	5004
cag cgg tgg tta aac ctc tat ctc tct gct tgc aaa ttt ttg gat ttg Gln Arg Trp Leu Asn Leu Tyr Leu Ser Ala Cys Lys Phe Leu Asp Leu 1570 1575 1580	5052
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tgg gcc ttt att cca gaa gcc tca gat gat tca ggt ttg gaa gtc aga Trp Ala Phe Ile Pro Glu Ala Ser Asp Asp Ser Gly Leu Glu Val Arg 1605 1610 1615	5148
agg cag ggt ata cat caa cga gaa ttt aaa cct tac gtg gta cga cta Arg Gln Gly Ile His Gln Arg Glu Phe Lys Pro Tyr Val Val Arg Leu 1620 1625 1630	5196

gca aaa ctt ctt cg <sup>g</sup> aaa aga gca aag aaa aat cca gag gaa gac aac Ala Lys Leu Leu Arg Lys Arg Ala Lys Lys Asn Pro Glu Glu Asp Asn	5244
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1665 1670 1675 1680	
agt caa gtc ttc aac agc aaa gtc aca agc cga tgt gga gga cac tca Ser Gln Val Phe Asn Ser Lys Val Thr Ser Arg Cys Gly Gly His Ser	5388
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1700 1705 1710	
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1715 1720 1725	
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ctgcgttgta tagttttcc tttttgtat gtaacagaac acatttcaga ttgtatttaa	5652
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aggcctggcc ctggctcccg agcgcgggtt cgccgggagg agcgtgtggc ggggggtgtgc 180  
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Met	Leu	Glu	Asn	Tyr	Gln	Asn	Leu	Leu	Ala	Leu	Gly	Pro	Pro			
1							5					10				
ctg	cac	aag	cca	gat	gtg	atc	tct	cat	ctg	gaa	cga	ggc	gag	gag	cca	1418
Leu	His	Lys	Pro	Asp	Val	Ile	Ser	His	Leu	Glu	Arg	Gly	Glu	Glu	Pro	
15									20				25		30	
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Trp	Ser	Met	Gln	Arg	Glu	Val	Pro	Arg	Gly	Pro	Cys	Pro	Glu	Trp	Glu	
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Leu	Lys	Ala	Val	Pro	Ser	Gln	Gln	Gln	Gly	Ile	Cys	Lys	Glu	Glu	Pro	
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gcc	cag	gag	ccc	atc	atg	gag	cg	ccc	ctc	ggc	ggg	gct	cag	gct	ttgg	1562
Ala	Gln	Glu	Pro	Ile	Met	Glu	Arg	Pro	Leu	Gly	Gly	Ala	Gln	Ala	Trp	
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ggg	cgc	cag	gca	gg	gt	ctg	cag	agg	agt	cag	gct	gct	ccc	tgg	gct	1610
Gly	Arg	Gln	Ala	Gly	Ala	Leu	Gln	Arg	Ser	Gln	Ala	Ala	Pro	Trp	Ala	
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ccc	gca	cct	gcc	atg	gtc	tgg	gac	gtc	cct	gta	gag	gaa	ttc	ccc	ctc	1658
Pro	Ala	Pro	Ala	Met	Val	Trp	Asp	Val	Pro	Val	Glu	Glu	Phe	Pro	Leu	
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agg	tgt	ccc	ctc	ttc	gcc	cag	caa	cgc	gtt	ccc	gag	ggg	gga	ccc	ttg	1706
Arg	Cys	Pro	Leu	Phe	Ala	Gln	Gln	Arg	Val	Pro	Glu	Gly	Gly	Pro	Leu	

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ctg gac aca cgc aag aac gtc cag gcc act gag ggc aga acc aag gcc Leu Asp Thr Arg Lys Asn Val Gln Ala Thr Glu Gly Arg Thr Lys Ala 130	135	140	1754
ccc gcg aga ctg tgt gca ggg gaa aac gcc tcc acg cca agt gag cca Pro Ala Arg Leu Cys Ala Gly Glu Asn Ala Ser Thr Pro Ser Glu Pro 145	150	155	1802
gaa aag ttc ccc cag gtg cgc cgg cag cgc ggg gcg ggc gcc ggg gag Glu Lys Phe Pro Gln Val Arg Arg Gln Arg Gly Ala Gly Ala Gly Glu 160	165	170	1850
ggc gag ttc gtg tgc ggc gag tgc ggg aag gcg ttc cgc cag agc tcc Gly Glu Phe Val Cys Gly Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser 175	180	185	1898
tcc ctc acg ctg cac cgg cgc tgg cac agc cgg gag aag gct tac aag Ser Leu Thr Leu His Arg Arg Trp His Ser Arg Glu Lys Ala Tyr Lys 195	200	205	1946
tgc gat gaa tgc ggc aag gcc ttc acc tgg agc acc aac ctt ctg gag Cys Asp Glu Cys Gly Lys Ala Phe Thr Trp Ser Thr Asn Leu Leu Glu 210	215	220	1994
cac cgg cgc atc cac acc ggc gag aag ccc ttc ttc tgc ggc gag tgc His Arg Arg Ile His Thr Gly Glu Lys Pro Phe Phe Cys Gly Glu Cys 225	230	235	2042
ggg aag gcc ttc agc tgc cac tcg tcc ctc aac gtg cac cag cgc atc Gly Lys Ala Phe Ser Cys His Ser Ser Leu Asn Val His Gln Arg Ile 240	245	250	2090
cac acg ggc gag cgg ccc tac aag tgc agc gcc tgc gag aag gcc ttc His Thr Gly Glu Arg Pro Tyr Lys Cys Ser Ala Cys Glu Lys Ala Phe 255	260	265	2138
agc tgc agc tcg ctc agc atg cac ctg cgg gtg cac acc ggc gag Ser Cys Ser Ser Leu Leu Ser Met His Leu Arg Val His Thr Gly Glu 275	280	285	2186
aag ccc tac cgg tgc ggc gag tgc ggc aag gcc ttc aac cag cgt aca Lys Pro Tyr Arg Cys Gly Glu Cys Gly Lys Ala Phe Asn Gln Arg Thr 290	295	300	2234
cac ctc aca cgc cac cac cgc atc cac acg ggc gag aag ccc tac cag His Leu Thr Arg His His Arg Ile His Thr Gly Glu Lys Pro Tyr Gln 305	310	315	2282
tgc ggc tcc tgc ggc aag gcc ttc acc tgc cac tca tcc ctc acc gtg Cys Gly Ser Cys Gly Lys Ala Phe Thr Cys His Ser Ser Leu Thr Val 320	325	330	2330
cat gag aag atc cac agc ggg gac aag ccg ttc aag tgc agc gac tgc His Glu Lys Ile His Ser Gly Asp Lys Pro Phe Lys Cys Ser Asp Cys 335	340	345	2378
gag aag gcc ttc aac agc cgc tcg cgc ctc acc ctc cac cag agg acg Glu Lys Ala Phe Asn Ser Arg Ser Arg Leu Thr Leu His Gln Arg Thr 355	360	365	2426
cac acg ggc gag aag ccc ttc aag tgc gcc gac tgc ggg aag ggc ttc His Thr Gly Glu Lys Pro Phe Lys Cys Ala Asp Cys Gly Lys Gly Phe			2474

370	375	380	
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tac ctc atc gtg cac cg <sup>g</sup> cgc atc cac aca ggc gag aag ccc ttc gac Tyr Leu Ile Val His Arg Arg Ile His Thr Gly Glu Lys Pro Phe Asp 415	420	425	2618
tgc agc cag tgt tgg aag gcc ttc agc tgc cac tcg tcc ctc atc gtg Cys Ser Gln Cys Trp Lys Ala Phe Ser Cys His Ser Ser Leu Ile Val 435	440	445	2666
cac cag cgc atc cac acc ggt gag aag ccc tac aag tgc agc gag tgc His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Ser Glu Cys 450	455	460	2714
ggc aga gcc ttc agc cag aac cac tgt ctc att aaa cat cag aaa atc Gly Arg Ala Phe Ser Gln Asn His Cys Leu Ile Lys His Gln Lys Ile 465	470	475	2762
cac tcc ggg gag aag tcg ttt aag tgt gag aaa tgt ggg gag atg ttc His Ser Gly Glu Lys Ser Phe Lys Cys Glu Lys Cys Gly Glu Met Phe 480	485	490	2810
aac tgg agc tcg cac ctc act gag cac cag agg ctg cac agc gag ggg Asn Trp Ser Ser His Leu Thr Glu His Gln Arg Leu His Ser Glu Gly 495	500	505	2858
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gtg cct ggc agc ctg ctg ggt gca ggg gat gct gga ctg agg gac gtg Val Pro Gly Ser Leu Leu Gly Ala Gly Asp Ala Gly Leu Arg Asp Val 530	535	540	2954
gat ccc atc gac gcg ctg gat gtg gca aag ctc ttg tgc gtg gtt ccc Asp Pro Ile Asp Ala Leu Asp Val Ala Lys Leu Leu Cys Val Val Pro 545	550	555	3002
ccc aga gct ggc agg aat ttc tcc ctg ggg agc aaa cct cga aac taa Pro Arg Ala Gly Arg Asn Phe Ser Leu Gly Ser Lys Pro Arg Asn *	560	565	3050
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Gly Pro Pro Gly Thr Ala Ser Ser Asp Gln Thr Ala Gln Gly Met				
130	135	140		
caa ctc ctg gac cca gcc tca ttt gag tac ctc ttt gag cag ggc aag				841
Gln Leu Leu Asp Pro Ala Ser Phe Glu Tyr Leu Phe Glu Gln Gly Lys				
145	150	155		
cat gag ttt gtg aat gac gtg gca tca ctg tgg gag ctg tcg acc gag				889
His Glu Phe Val Asn Asp Val Ala Ser Leu Trp Glu Leu Ser Thr Glu				
160	165	170		
gag gag atc cac cac ttt aag aat gag agc ctg ggc atg gcc ttt ctg				937
Glu Glu Ile His His Phe Lys Asn Glu Ser Leu Gly Met Ala Phe Leu				
175	180	185		
cac ctc tgt cac ctc gct ctc cgc cat ggc atc ccc ctg gag gag gtg				985
His Leu Cys His Leu Ala Leu Arg His Gly Ile Pro Leu Glu Glu Val				
190	195	200	205	
gcc aag aag acc agc ttc aag gac tgc atc ccg cgc tcc ttc cgc cgg				1033
Ala Lys Lys Thr Ser Phe Lys Asp Cys Ile Pro Arg Ser Phe Arg Arg				
210	215	220		
cat atc cgg cag cac agc gcc ctg acc cgg ctg cgc ctt cgg aac gtc				1081
His Ile Arg Gln His Ser Ala Leu Thr Arg Leu Arg Leu Arg Asn Val				
225	230	235		
tcc cgc agg ttc ctg cgg gac ttc cag ccg ggc cga ctc tcc cag cag				1129
Phe Arg Arg Phe Leu Arg Asp Phe Gln Pro Gly Arg Leu Ser Gln Gln				
240	245	250		
atg gtc atg gtc aaa tac cta gcc aca ctc gag cgg ctg gca ccc cgc				1177
Met Val Met Val Lys Tyr Leu Ala Thr Leu Glu Arg Leu Ala Pro Arg				
255	260	265		
tcc ggc aca gag cgt gtg ccc gtg tgc cac ctg agg ctg ctg gcc cag				1225
Phe Gly Thr Glu Arg Val Pro Val Cys His Leu Arg Leu Leu Ala Gln				
270	275	280	285	
gcc gag ggg gag ccc tgc tac atc cgg gac agt ggg gtg gcc cct aca				1273
Ala Glu Gly Glu Pro Cys Tyr Ile Arg Asp Ser Gly Val Ala Pro Thr				
290	295	300		
gac cct ggc cct gag tct gct ggt ggg ccc cca acc cac gag gtg ctg				1321
Asp Pro Gly Pro Glu Ser Ala Ala Gly Pro Pro Thr His Glu Val Leu				
305	310	315		
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Val Thr Gly Thr Gly Gly Ile Gln Trp Trp Pro Val Glu Glu Glu Val				
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aac aag gag gag ggt tct agt ggc agc agt ggc agg aac ccc caa gcc				1417
Asn Lys Glu Glu Gly Ser Ser Gly Ser Ser Gly Arg Asn Pro Gln Ala				
335	340	345		
agc ctg ttt ggg aag aag gcc aag gct cac aag gca ttc ggc cag ccg				1465
Ser Leu Phe Gly Lys Ala Lys Ala His Lys Ala Phe Gly Gln Pro				
350	355	360	365	
gca gac agg ccg cgg gag cca ctg tgg gcc tac ttc tgt gac ttc cgg				1513

Ala Asp Arg Pro Arg Glu Pro Leu Trp Ala Tyr Phe Cys Asp Phe Arg			
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Asp Ile Thr His Val Val Leu Lys Glu His Cys Val Ser Ile His Arg			
385	390	395	
cag gac aac aag tgc ctg gag ctg agc ttg cct tcc cgg gct gcg gcg		1609	
Gln Asp Asn Lys Cys Leu Glu Leu Ser Leu Pro Ser Arg Ala Ala Ala			
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Leu Ser Phe Val Ser Leu Val Asp Gly Tyr Phe Arg Leu Thr Ala Asp			
415	420	425	
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Ser Ser His Tyr Leu Cys His Glu Val Ala Pro Pro Arg Leu Val Met			
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Ser Ile Arg Asp Gly Ile His Gly Pro Leu Leu Glu Pro Phe Val Gln			
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gcc aag ctg cgg ccc gag gac ggc ctg tac ctc att cac tgg agc acc		1801	
Ala Lys Leu Arg Pro Glu Asp Gly Leu Tyr Leu Ile His Trp Ser Thr			
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Ser His Pro Tyr Arg Leu Ile Leu Thr Val Ala Gln Arg Ser Gln Ala			
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acc tcc aat ctc atc atc atg cgg ggg gct cgg gcc agc ccc agg aca		2089	
Thr Ser Asn Leu Ile Ile Met Arg Gly Ala Arg Ala Ser Pro Arg Thr			
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cta gaa cgg cag agc agt gtc aaa cac acc cct gac gtg gtt ctg gac Leu Glu Arg Gln Ser Ser Val Lys His Thr Pro Asp Val Val Leu Asp 960	965	970	975	3587
acc ttg gag ccc ctc aaa acc tcc cca gtg gtg gcc ccc acg tca gag Thr Leu Glu Pro Leu Lys Thr Ser Pro Val Val Ala Pro Thr Ser Glu 980	985	990	3635	
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cct gtc aag tct gtc aag atg gct gcc ccg gtc aaa cca cca gcc aca Pro Val Lys Ser Val Lys Met Ala Ala Pro Val Lys Pro Pro Ala Thr 1025	1030	1035	3779	
cgg ccc aag ccc act gtc ttc ccc aaa aca aat gcc act agc cct ggt Arg Pro Lys Pro Thr Val Phe Pro Lys Thr Asn Ala Thr Ser Pro Gly 1040	1045	1050	1055	3827
gtc aac tca tca act tcc cca cag tct act gac aag tct tgt act gtc Val Asn Ser Ser Thr Ser Pro Gln Ser Thr Asp Lys Ser Cys Thr Val 1060	1065	1070	3875	
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 Met Ala Ser  
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 Glu Gly Pro Arg Glu Pro Glu Ser Glu Gly Ile Lys Leu Ser Ala Asp  
 5 10 15  
 Val Lys Pro Phe Val Pro Arg Phe Ala Gly Leu Asn Val Ala Trp Leu 213  
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 Glu Ser Ser Glu Ala Cys Val Phe Pro Ser Ser Ala Ala Thr Tyr Tyr  
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 ccg ttt gtt cag gaa cca cca gtg aca gag cag aaa ata tat act gaa 309  
 Pro Phe Val Gln Glu Pro Pro Val Thr Glu Gln Lys Ile Tyr Thr Glu  
 55 60 65

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gag ata act ctt cat cca tat gcc tat tct cct tat acc ctt gac tcc Glu Ile Thr Leu His Pro Tyr Ala Tyr Ser Pro Tyr Thr Leu Asp Ser 85 90 95	405
aca cag aat gtt tac tca gtg cct ggc tcc cag tat ctt tat aac caa Thr Gln Asn Val Tyr Ser Val Pro Gly Ser Gln Tyr Leu Tyr Asn Gln 100 105 110 115	453
ccc agt tgt tac cga ggt ttt caa aca gtg aag cat cga aat gag aac Pro Ser Cys Tyr Arg Gly Phe Gln Thr Val Lys His Arg Asn Glu Asn 120 125 130	501
aca tgc cct ctc cca caa gaa atg aaa gct ctg ttt aag aag aaa acc Thr Cys Pro Leu Pro Gln Glu Met Lys Ala Leu Phe Lys Lys Lys Thr 135 140 145	549
tat gat gag aaa aaa acg tat gat cag caa aag ttt gac agt gaa agg Tyr Asp Glu Lys Lys Thr Tyr Asp Gln Gln Lys Phe Asp Ser Glu Arg 150 155 160	597
gct gat gga act ata tca tct gag ata aaa tca gct aga ggt tca cat Ala Asp Gly Thr Ile Ser Ser Glu Ile Lys Ser Ala Arg Gly Ser His 165 170 175	645
cat ttg tcc att tac gct gag aat agt ttg aaa tca gat ggt tac cat His Leu Ser Ile Tyr Ala Glu Asn Ser Leu Lys Ser Asp Gly Tyr His 180 185 190 195	693
aag cga aca gac agg aaa tcc aga atc att gca aaa aat gta tct acc Lys Arg Thr Asp Arg Lys Ser Arg Ile Ile Ala Lys Asn Val Ser Thr 200 205 210	741
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ctt gaa caa aat gaa gcc tca aga aag aat aag aaa aaa aaa aaa aaa Leu Glu Gln Asn Glu Ala Ser Arg Lys Asn Lys Lys Lys Lys Lys Lys 375                   380                   385	1269
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aag aaa ggg aag cag agg gag atc ccc aag gcc aag aag cca acc tca Lys Lys Gly Lys Gln Arg Glu Ile Pro Lys Ala Lys Lys Pro Thr Ser 520                   525                   530	1701
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caa gaa aat gct gtg agt cca gct ttt acc agt gat gac aca caa gat Gln Glu Asn Ala Val Ser Pro Ala Phe Thr Ser Asp Asp Thr Gln Asp 550                   555                   560	1797
gga gag agt ggt ggt gat gac cag ttt ccc gag cag gca gag ctg tca Gly Glu Ser Gly Gly Asp Asp Gln Phe Pro Glu Gln Ala Glu Leu Ser 565                   570                   575	1845

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85

90

95

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ctc ctg ctg ctg ctc tgc cag ttc atg gag gac cgc agt gcc cag Leu Leu Leu Leu Leu Cys Gln Phe Met Glu Asp Arg Ser Ala Gln 15 20 25		396
gct ggg aac tgc tgg ctc cgt caa gcg aag aac ggc cgc tgc cag gtc Ala Gly Asn Cys Trp Leu Arg Gln Ala Lys Asn Gly Arg Cys Gln Val 30 35 40		444
ctg tac aag acc gaa ctg agc aag gag gag tgc tgc agc acc ggc cgg Leu Tyr Lys Thr Glu Leu Ser Lys Glu Glu Cys Cys Ser Thr Gly Arg 45 50 55 60		492
ctg agc acc tcg tgg acc gag gag gac gtg aat gac aac aca ctc ttc Leu Ser Thr Ser Trp Thr Glu Glu Asp Val Asn Asn Thr Leu Phe 65 70 75		540
aag tgg atg att ttc aac ggg ggc gcc ccc aac tgc atc ccc tgt aaa Lys Trp Met Ile Phe Asn Gly Ala Pro Asn Cys Ile Pro Cys Lys 80 85 90		588
gaa acg tgt gag aac gtg gac tgt gga cct ggg aaa aaa tgc cga atg Glu Thr Cys Glu Asn Val Asp Cys Gly Pro Gly Lys Lys Cys Arg Met 95 100 105		636
aac aag aag aac aaa ccc cgc tgc gtc tgc gcc ccg gat tgt tcc aac Asn Lys Asn Lys Pro Arg Cys Val Cys Ala Pro Asp Cys Ser Asn 110 115 120		684
atc acc tgg aag ggt cca gtc tgc ggg ctg gat ggg aaa acc tac cgc Ile Thr Trp Lys Gly Pro Val Cys Gly Leu Asp Gly Lys Thr Tyr Arg 125 130 135 140		732
aat gaa tgt gca ctc cta aag gca aga tgt aaa gag cag cca gaa ctg Asn Glu Cys Ala Leu Leu Lys Ala Arg Cys Lys Glu Gln Pro Glu Leu 145 150 155		780
gaa gtc cag tac caa ggc aga tgt aaa aag act tgt cgg gat gtt ttc Glu Val Gln Tyr Gln Gly Arg Cys Lys Lys Thr Cys Arg Asp Val Phe 160 165 170		828
tgt cca ggc agc tcc aca tgt gtg gtg gac cag acc aat aat gcc tac Cys Pro Gly Ser Ser Thr Cys Val Val Asp Gln Thr Asn Asn Ala Tyr 175 180 185		876
tgt gtg acc tgt aat cgg att tgc cca gag cct gct tcc tct gag caa Cys Val Thr Cys Asn Arg Ile Cys Pro Glu Pro Ala Ser Ser Glu Gln 190 195 200		924
tat ctc tgt ggg aat gat gga gtc acc tac tcc agt gcc tgc cac ctg Tyr Leu Cys Gly Asn Asp Gly Val Thr Tyr Ser Ser Ala Cys His Leu 205 210 215 220		972
aga aag gct acc tgc ctg ggc aga tct att gga tta gcc tat gag Arg Lys Ala Thr Cys Leu Leu Gly Arg Ser Ile Gly Leu Ala Tyr Glu 225 230 235		1020
gga aag tgt atc aaa gca aag tcc tgt gaa gat atc cag tgc act ggt Gly Lys Cys Ile Lys Ala Lys Ser Cys Glu Asp Ile Gln Cys Thr Gly 240 245 250		1068
ggg aaa aaa tgt tta tgg gat ttc aag gtt ggg aga ggc egg tgt tcc		1116

Gly Lys Lys Cys Leu Trp Asp Phe Lys Val Gly Arg Gly Arg Cys Ser		
255	260	265
ctc tgt gat gag ctg tgc cct gac agt aag tcg gat gag cct gtc tgt		1164
Leu Cys Asp Glu Leu Cys Pro Asp Ser Lys Ser Asp Glu Pro Val Cys		
270	275	280
gcc agt gac aat gcc act tat gcc agc gag tgt gcc atg aag gaa gct		1212
Ala Ser Asp Asn Ala Thr Tyr Ala Ser Glu Cys Ala Met Lys Glu Ala		
285	290	295
290	295	300
gcc tgc tcc tca ggt gtg cta ctg gaa gta aag cac tcc gga tct tgc		1260
Ala Cys Ser Ser Gly Val Leu Leu Glu Val Lys His Ser Gly Ser Cys		
305	310	315
aac tcc att tcg gaa gac acc gag gaa gag gaa gat gaa gac cag		1308
Asn Ser Ile Ser Glu Asp Thr Glu Glu Glu Asp Glu Asp Gln		
320	325	330
gac tac agc ttt cct ata tct tct att cta gag tgg taa actctctata		1357
Asp Tyr Ser Phe Pro Ile Ser Ser Ile Leu Glu Trp *		
335	340	345
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<220>  
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<222> (243)..(2192)

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ccaattcaact gtcaatggaa ttacagctat agcggcagtg tatataggat tgcttttct		180
cgtttcctg gttctgaag taacggaagc taccttgat aaagacctca acactgctga		240
cc atg atc agc gca gcc tgg agc atc ttc ctc atc ggg act aaa att		287
Met Ile Ser Ala Ala Trp Ser Ile Phe Leu Ile Gly Thr Lys Ile		
1	5	10
15		
ggg ctg ttc ctt caa gta gca cct cta tca gtt atg gct aaa tcc tgt		335
Gly Leu Phe Leu Gln Val Ala Pro Leu Ser Val Met Ala Lys Ser Cys		
20	25	30
cca tct gtg tgt cgc tgc gat gcg ggt ttc att tac tgt aat gat cgc		383
Pro Ser Val Cys Arg Cys Asp Ala Gly Phe Ile Tyr Cys Asn Asp Arg		
35	40	45
ttt ctg aca tcc att cca aca gga ata cca gag gat gct aca act ctc		431
Phe Leu Thr Ser Ile Pro Thr Gly Ile Pro Glu Asp Ala Thr Thr Leu		
50	55	60
tac ctt cag aac aac caa ata aat aat gct ggg att cct tca gat ttg		479
Tyr Leu Gln Asn Asn Gln Ile Asn Asn Ala Gly Ile Pro Ser Asp Leu		

65	70	75	
aaa aac ttg ctg aaa gta gaa aga ata tac cta tac cac aac agt tta Lys Asn Leu Leu Lys Val Glu Arg Ile Tyr Leu Tyr His Asn Ser Leu 80 85 90 95			527
gat gaa ttt cct acc aac ctc cca aag tat gta aaa gag tta cat ttg Asp Glu Phe Pro Thr Asn Leu Pro Lys Tyr Val Lys Glu Leu His Leu 100 105 110			575
caa gaa aat aac ata agg act atc act tat gat tca ctt tca aaa att Gln Glu Asn Asn Ile Arg Thr Ile Thr Tyr Asp Ser Leu Ser Lys Ile 115 120 125			623
ccc tat ctg gaa gaa tta cat tta gat gac aac tct gtc tct gca gtt Pro Tyr Leu Glu Glu Leu His Leu Asp Asp Asn Ser Val Ser Ala Val 130 135 140			671
agc ata gaa gag gga gca ttc cga gac agc aac tat ctc cga ctg ctt Ser Ile Glu Glu Gly Ala Phe Arg Asp Ser Asn Tyr Leu Arg Leu Leu 145 150 155			719
ttc ctg tcc cgt aat cac ctt agc aca att ccc tgg ggt ttg ccc agg Phe Leu Ser Arg Asn His Leu Ser Thr Ile Pro Trp Gly Leu Pro Arg 160 165 170 175			767
act ata gaa gaa cta cgc ttg gat gat aat cgc ata tcc act att tca Thr Ile Glu Glu Leu Arg Leu Asp Asp Asn Arg Ile Ser Thr Ile Ser 180 185 190			815
tca cca tct ctt caa ggt ctc act agt cta aaa cgc ctg gtt cta gat Ser Pro Ser Leu Gln Gly Leu Thr Ser Leu Lys Arg Leu Val Leu Asp 195 200 205			863
gga aac ctg ttg aac aat cat ggt tta ggt gac aaa gtt ttc ttc aac Gly Asn Leu Leu Asn Asn His Gly Leu Gly Asp Lys Val Phe Phe Asn 210 215 220			911
cta gtt aat ttg aca gag ctg tcc ctg gtg cgg aat tcc ctg act gct Leu Val Asn Leu Thr Glu Leu Ser Leu Val Arg Asn Ser Leu Thr Ala 225 230 235			959
gca cca gta aac ctt cca ggc aca aac ctg agg aag ctt tat ctt caa Ala Pro Val Asn Leu Pro Gly Thr Asn Leu Arg Lys Leu Tyr Leu Gln 240 245 250 255			1007
gat aac cac atc aat cgg gtg ccc cca aat gct ttt tct tat cta agg Asp Asn His Ile Asn Arg Val Pro Pro Asn Ala Phe Ser Tyr Leu Arg 260 265 270			1055
cag ctc tat cga ctg gat atg tcc aat aat aac cta agt aat tta cct Gln Leu Tyr Arg Leu Asp Met Ser Asn Asn Leu Ser Asn Leu Pro 275 280 285			1103
cag ggt atc ttt gat gat ttg gac aat ata aca caa ctg att ctt cgc Gln Gly Ile Phe Asp Asp Leu Asp Asn Ile Thr Gln Leu Ile Leu Arg 290 295 300			1151
aac aat ccc tgg tat tgc ggg tgc aag atg aaa tgg gta cgt gac tgg Asn Asn Pro Trp Tyr Cys Gly Cys Lys Met Lys Trp Val Arg Asp Trp 305 310 315			1199
tta caa tca cta cct gtg aag gtc aac gtg cgt ggg ctc atg tgc caa Leu Gln Ser Leu Pro Val Lys Val Asn Val Arg Gly Leu Met Cys Gln			1247

320	325	330	335	
gcc cca gaa aag gtt cgt ggg atg gct att aag gat ctc aat gca gaa Ala Pro Glu Lys Val Arg Gly Met Ala Ile Lys Asp Leu Asn Ala Glu	340	345	350	1295
ctg ttt gat tgt aag gac agt ggg att gta agc acc att cag ata acc Leu Phe Asp Cys Lys Asp Ser Gly Ile Val Ser Thr Ile Gln Ile Thr	355	360	365	1343
act gca ata ccc aac aca gtg tat cct gcc caa gga cag tgg cca gct Thr Ala Ile Pro Asn Thr Val Tyr Pro Ala Gln Gly Gln Trp Pro Ala	370	375	380	1391
cca gtg acc aaa cag cca gat att aag aac ccc aag ctc act aag gat Pro Val Thr Lys Gln Pro Asp Ile Lys Asn Pro Lys Leu Thr Lys Asp	385	390	395	1439
cac caa acc aca ggg agt ccc tca aga aaa aca att aca att act gtg His Gln Thr Thr Gly Ser Pro Ser Arg Lys Thr Ile Thr Ile Thr Val	400	405	410	1487
aag tct gtc acc tct gat acc att cat atc tct tgg aaa ctt gct cta Lys Ser Val Thr Ser Asp Thr Ile His Ile Ser Trp Lys Leu Ala Leu	420	425	430	1535
cct atg act gct ttg aga ctc agc tgg ctt aaa ctg ggc cat agc ccg Pro Met Thr Ala Leu Arg Leu Ser Trp Leu Lys Leu Gly His Ser Pro	435	440	445	1583
gca ttt gga tct ata aca gaa aca att gta aca ggg gaa cgc agt gag Ala Phe Gly Ser Ile Thr Glu Thr Ile Val Thr Gly Glu Arg Ser Glu	450	455	460	1631
tac ttg gtc aca gcc ctg gag cct gat tca ccc tat aaa gta tgc atg Tyr Leu Val Thr Ala Leu Glu Pro Asp Ser Pro Tyr Lys Val Cys Met	465	470	475	1679
gtt ccc atg gaa acc agc aac ctc tac cta ttt gat gaa act cct gtt Val Pro Met Glu Thr Ser Asn Leu Tyr Leu Phe Asp Glu Thr Pro Val	480	485	490	1727
tgt att gag act gaa act gca ccc ctt cga atg tac aac cct aca acc Cys Ile Glu Thr Glu Thr Ala Pro Leu Arg Met Tyr Asn Pro Thr Thr	500	505	510	1775
acc ctc aat cga gag caa gag aaa gaa cct tac aaa aac ccc aat tta Thr Leu Asn Arg Glu Gln Glu Lys Glu Pro Tyr Lys Asn Pro Asn Leu	515	520	525	1823
cct ttg gct gcc atc att ggt ggg gct gtg gcc ctg gtt acc att gcc Pro Leu Ala Ala Ile Ile Gly Gly Ala Val Ala Leu Val Thr Ile Ala	530	535	540	1871
ctt ctt gct tta gtg tgt tgg tat gtt cat agg aat gga tcg ctc ttc Leu Leu Ala Leu Val Cys Trp Tyr Val His Arg Asn Gly Ser Leu Phe	545	550	555	1919
tca agg aac tgt gca tat agc aaa ggg agg aga aga aag gat gac tat Ser Arg Asn Cys Ala Tyr Ser Lys Gly Arg Arg Lys Asp Asp Tyr	560	565	570	1967
gca gaa gct ggc act aag aag gac aac tct atc ctg gaa atc agg gaa Ala Glu Ala Gly Thr Lys Asp Asn Ser Ile Leu Glu Ile Arg Glu				2015

580	585	590	
act tct ttt cag atg tta cca ata agc aat gaa ccc atc tcg aag gag Thr Ser Phe Gln Met Leu Pro Ile Ser Asn Glu Pro Ile Ser Lys Glu	595	600	2063
		605	
gag ttt gta ata cac acc ata ttt cct cct aat gga atg aat ctg tac Glu Phe Val Ile His Thr Ile Phe Pro Pro Asn Gly Met Asn Leu Tyr	610	615	2111
		620	
aaa aac aat cac agt gaa agc agt agt aac cga agc tac aga gac agt Lys Asn Asn His Ser Glu Ser Ser Asn Arg Ser Tyr Arg Asp Ser	625	630	2159
		635	
ggt att cca gac tca gat cac tca cac tca tga tgctgaag gactcacagc Gly Ile Pro Asp Ser Asp His Ser His Ser *	640	645	2210
		650	
agacttgtt tttgggtttt tttaaacctaa gggaggtgat ggttaggaacc ctgttctact gcacaaacact ggaaaaagag actgaaaaaaaa agcaatgtac tgtacatttg ccatataatt			2270
tatatttaag aacttttat taaaagtttc aaatttcagg ttactgctgc gattgatgta gtggagatgc ctgaacacaa ttctatattt tagtatttt tagtaatttg tactgtattt			2330
tccttgcaaa tattggagtt ataaaaccatt tactttgtgt tctactgagt aagatgactt gttgactgtg aaagtgaatt ttctgctgt gtcgaacaat caggactgca ttcatatgag			2390
atcctttag tataaggcaca ggcattttt cactttggta ttaataaaaat gtaaaaaaaa aaaactggct gaatggctga atgagataaa atttattt aaaaatggt tatgaaataa			2450
tgttccaatt attaaatttg tattatccca gtggatttca ataaatcaaa atgtgtgaag taatggcaa tatcaaactt cctgcataatc tccatttttgc ctctaggcaa attaattatc			2510
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atgtaaaatgt gcttccaagt tggggggaaa atgtgtactt aggaaaacat ggaaaacttag acttgtatag tgtaatgaac acaaatacca aaactgcatt ttggtttgc ctataaccatc			2630
ctgatttttgc aaaaatgtaat tataaacaca aaattgttag tgtttatgtat gtttttatca taaaggatgt cagagaaaact ttatgcataat taaaatgtat atgtaaattat aagcgattcc			2690
cctcaacaat ccagagaaaag tagttcttta aataagagat aatttaaaga aaaataaata ctagacatca aatttagatc tggtttatgt caaaggaaaa aacactgtac ataaatgttc			2750
aatttacttt tacaaaagatc aagaatactg cccattactg tcacaattttt ccagatatta tataatgaac tcgtaatgtat acatttcattt ctagcttcctt actgaattgt gagctgttac			2810
ttgttggaaa accatatacact ttttctgttg ccatgattttt ttttttcaa caaaaaaccca aagtgcatttacgccccctt ggccagtcattt gtatgtgcct tgatccaacg ctacatgtat			2870
tcagctttta aaactccaca aatttttcat actccttaaa tatgaaaaat tatggtctta tatggtctta			2930
			3050
			3110
			3170
			3230
			3290
			3350
			3410
			3470
			3530
			3590

ttgctgaata aaacttttaa aaagtacaga ataattgtgc ttgcttttc aggattgtgt	3650
tactatcact aagtagcaaa ttgcccgca cattagtcct aaacgtccca tgtatTTTC	3710
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 <212> DNA  
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<220>  
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ggattaggag ggccggcgccg aagccaagaa tagtgtcgtc agcagcagcc atttggtccc	180
aggagaaaaa gaggctgtgg cagcgacgccc gacgtcctgc gctgtacccccc tctccgcggc	240
acccacccggg ccccccttcctc ctccctttcg gcggccggcag cgtccaccat cttcccttttg	300
ctgccagtgg tagcgctcgt ctggcgagc tggttgg tcttgacgt attatggatg	360
aaggagttgt taaaagaaagt ggcaatgata ccattgtatga agaagaactg attttaccta	420
acaggaacctt aagggacaag gtagaagaaa attcagttag atctccaaga aaatcacctc	480
gtttaatggc acaagaacaa gtaagaagtt tgcgacagag cactattgcc aagcgttcaa	540
atgcagcacc attaagtaac acaaaaaaaaa catctggaa gactgtatct actgctaaag	600
caggagtgaa acaaccagaa aggagtcagg taaaagaaga agtatgtatg tcactgaaac	660
ctgagtagcca taaggagaat agaaggtgca gccgaaatag cgacaaattt gaagtggtagc	720
ctgaagtatc agtgtcttca agtcattttt cagtgtcatc ttgtcttcaa atgaaggatg	780
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gaagctttga tggaaatgtaa agccaaaggct gttggtagtc caattgttta agttttcaga	960
taaagaagaa catgaacaaa atgattccat ttccaggtaaa acgggtgaga ctgttggta	1020
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 cagaaaacagc cagtcaagta gcgtttctta cttagagtca aaaagtgtaa aatccaaaca 1560  
 tacaaaacct gtaattcatt ctaagcaaaa c atg acc aca gat gct ccg aag 1612  
 Met Thr Thr Asp Ala Pro Lys  
 1 5  
 aaa att gtt gca gca aag tat gaa gta ata cat agc aaa act aaa gtt 1660  
 Lys Ile Val Ala Ala Lys Tyr Glu Val Ile His Ser Lys Thr Lys Val  
 10 15 20  
 aat gtc aaa agt gtg aaa cga aat act gat gta cca gaa tct cag caa 1708  
 Asn Val Lys Ser Val Lys Arg Asn Thr Asp Val Pro Glu Ser Gln Gln  
 25 30 35  
 aat ctg cat agg cca gtc aaa gtc aga aaa aaa caa att gat aag gag 1756  
 Asn Leu His Arg Pro Val Lys Val Arg Lys Lys Gln Ile Asp Lys Glu  
 40 45 50 55  
 cca aag att cag agt tgc aat tct ggg gtt aaa tct gtg aaa aac caa 1804  
 Pro Lys Ile Gln Ser Cys Asn Ser Gly Val Lys Ser Val Lys Asn Gln  
 60 65 70  
 gct cat tct gta ctg aaa aaa aca tta cag gat caa act tta gta caa 1852  
 Ala His Ser Val Leu Lys Thr Leu Gln Asp Gln Thr Leu Val Gln  
 75 80 85  
 att ttc aag ccc tta act cat tct ttg agt gat aag tca cac gct cat 1900  
 Ile Phe Lys Pro Leu Thr His Ser Leu Ser Asp Lys Ser His Ala His  
 90 95 100  
 cct ggt tgc ttg aaa gaa cct cat cat cct gca caa act gga cat gta 1948  
 Pro Gly Cys Leu Lys Glu Pro His His Pro Ala Gln Thr Gly His Val  
 105 110 115  
 tca cat tct agc cag aaa cag tgt cat aag cct cag caa cag gcc cca 1996  
 Ser His Ser Ser Gln Lys Gln Cys His Lys Pro Gln Gln Gln Ala Pro  
 120 125 130 135  
 gca atg aaa acc aat agt cac gtg aag gaa gag ctt gaa cac cca ggc 2044  
 Ala Met Lys Thr Asn Ser His Val Lys Glu Glu Leu Glu His Pro Gly  
 140 145 150  
 gtt gag cat ttt aag gaa gag gat aaa ctg aaa ctg aaa cct gag 2092  
 Val Glu His Phe Lys Glu Glu Asp Lys Leu Lys Lys Pro Glu  
 155 160 165  
 aag aac cta caa ccc cgc caa aga aga agc agc aaa agt ttt tct tta 2140  
 Lys Asn Leu Gln Pro Arg Gln Arg Arg Ser Ser Lys Ser Phe Ser Leu  
 170 175 180  
 gat gag cca cca ttg ttc att cca gat aac ata gct acc ata aga aga 2188  
 Asp Glu Pro Pro Leu Phe Ile Pro Asp Asn Ile Ala Thr Ile Arg Arg  
 185 190 195  
 gaa ggc tct gat cat agc tcc tca ttt gaa agc aaa tat atg tgg act 2236  
 Glu Gly Ser Asp His Ser Ser Phe Glu Ser Lys Tyr Met Trp Thr  
 200 205 210 215  
 ccc agc aag cag tgt ggg ttt tgc aaa aaa cca cat ggc aac agg ttt 2284

Pro Ser Lys Gln Cys Gly Phe Cys Lys Lys Pro His Gly Asn Arg Phe			
220	225	230	
atg gtt ggc tgg aga tgg gat gac tgg ttt cat ggt gat tgg gtt			2332
Met Val Gly Cys Gly Arg Cys Asp Asp Trp Phe His Gly Asp Cys Val			
235	240	245	
ggg tta agt ctt tct caa gca cag cag atg ggc gag gaa gac aaa gaa			2380
Gly Leu Ser Leu Ser Gln Ala Gln Gln Met Gly Glu Glu Asp Lys Glu			
250	255	260	
tat gtc tgg gta aaa tgg tgg gct gaa gaa gac aaa aag act gaa ata			2428
Tyr Val Cys Val Lys Cys Cys Ala Glu Glu Asp Lys Lys Thr Glu Ile			
265	270	275	
cta gat cca gat act ttg gaa aac caa gct aca gtt gaa ttc cat agt			2476
Leu Asp Pro Asp Thr Leu Glu Asn Gln Ala Thr Val Glu Phe His Ser			
280	285	290	295
gga gat aaa aca atg gag tgg gaa aag ctt gga tta tca aaa cac aca			2524
Gly Asp Lys Thr Met Glu Cys Glu Lys Leu Gly Leu Ser Lys His Thr			
300	305	310	
aca aat gat aga acc aaa tat ata gat gat aca gtg aag cac aag gtc			2572
Thr Asn Asp Arg Thr Lys Tyr Ile Asp Asp Thr Val Lys His Lys Val			
315	320	325	
aaa att tta aaa cgg gag tct ggt gaa ggc aga aat tca tca gac tgg			2620
Lys Ile Leu Lys Arg Glu Ser Gly Glu Gly Arg Asn Ser Ser Asp Cys			
330	335	340	
aga gat aat gaa att aaa aaa tgg cag cta gct cct ctt cgt aag atg			2668
Arg Asp Asn Glu Ile Lys Lys Trp Gln Leu Ala Pro Leu Arg Lys Met			
345	350	355	
gga caa cca gtt tta cct cgg aga tcc tca gaa gaa aaa agt gaa aaa			2716
Gly Gln Pro Val Leu Pro Arg Arg Ser Ser Glu Glu Lys Ser Glu Lys			
360	365	370	375
ata ccg aaa gag tct aca act gtt act tgc aca gga gaa aaa gct tca			2764
Ile Pro Lys Glu Ser Thr Thr Val Thr Cys Thr Gly Glu Lys Ala Ser			
380	385	390	
aaa cca ggt act cat gag aag caa gag atg aaa aag aag aaa gtt gaa			2812
Lys Pro Gly Thr His Glu Lys Gln Glu Met Lys Lys Lys Val Glu			
395	400	405	
aaa gga gtg ctt aat gta cat cct gct gct tgg aag cct tct			2860
Lys Gly Val Leu Asn Val His Pro Ala Ala Ser Ala Ser Lys Pro Ser			
410	415	420	
gca gat cag atc agg caa agt gtc aga cat tct ctc aaa gac att ctt			2908
Ala Asp Gln Ile Arg Gln Ser Val Arg His Ser Leu Lys Asp Ile Leu			
425	430	435	
atg aag aga ctt aca gac tca aat ttg aag gta cca gag gaa aag gca			2956
Met Lys Arg Leu Thr Asp Ser Asn Leu Lys Val Pro Glu Glu Lys Ala			
440	445	450	455
gca aaa gtt gcc aca aaa att gag aaa gag ctt ttc tct ttt ttt cgg			3004
Ala Lys Val Ala Thr Lys Ile Glu Lys Glu Leu Phe Ser Phe Phe Arg			
460	465	470	
gac aca gat gct aaa tat aag aac aaa tat aga agt ttg atg ttt aat			3052

Asp Thr Asp Ala Lys Tyr Lys Asn Lys Tyr Arg Ser Leu Met Phe Asn			
475	480	485	
ttg aaa gat cct aaa aac aat ata tta ttt aaa aaa gta ctg aaa gga			3100
Leu Lys Asp Pro Lys Asn Asn Ile Leu Phe Lys Lys Val Leu Lys Gly			
490	495	500	
gaa gta act cct gat cat ctt atc aga atg agt cca gaa gaa cta gct			3148
Glu Val Thr Pro Asp His Leu Ile Arg Met Ser Pro Glu Glu Leu Ala			
505	510	515	
tct aaa gag tta gct gct tgg aga cga aga gaa aac aga cat acc ata			3196
Ser Lys Glu Leu Ala Ala Trp Arg Arg Arg Glu Asn Arg His Thr Ile			
520	525	530	535
gaa atg att gag aaa gag cag aga gaa gtg gaa cga cgg cca atc acc			3244
Glu Met Ile Glu Lys Glu Gln Arg Glu Val Glu Arg Arg Pro Ile Thr			
540	545	550	
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Lys Ile Thr His Lys Gly Glu Ile Glu Ile Ser Asp Ala Pro Met			
555	560	565	
aaa gaa cag gaa gca gcc atg gag att cag gaa cca gcc gcc aat aag			3340
Lys Glu Gln Glu Ala Ala Met Glu Ile Gln Glu Pro Ala Ala Asn Lys			
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Ser Leu Glu Lys Pro Glu Gly Ser Glu Lys Gln Lys Glu Glu Val Asp			
585	590	595	
tct atg tct aaa gat acc act agt caa cac aga cag cat ctt ttt gat			3436
Ser Met Ser Lys Asp Thr Thr Ser Gln His Arg Gln His Leu Phe Asp			
600	605	610	615
ctc aac tgc aaa atc tgc ata ggt cga atg gca cca cct gta gat gat			3484
Leu Asn Cys Lys Ile Cys Ile Gly Arg Met Ala Pro Pro Val Asp Asp			
620	625	630	
ctt tct cca aaa aaa gta aaa gtt gtt gta gga gta gct cgc aaa cat			3532
Leu Ser Pro Lys Lys Val Lys Val Val Val Gly Val Ala Arg Lys His			
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Ser Asp Asn Glu Ala Glu Ser Ile Ala Asp Ala Leu Ser Ser Thr Ser			
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Asn Ile Leu Ala Ser Glu Phe Phe Glu Glu Lys Gln Glu Ser Pro			
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aag tca acg ttc tct cct gct cca cgt cca gag atg cct gga act gtt			3676
Lys Ser Thr Phe Ser Pro Ala Pro Arg Pro Glu Met Pro Gly Thr Val			
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Glu Val Glu Ser Thr Phe Leu Ala Arg Leu Asn Phe Ile Trp Lys Gly			
700	705	710	
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Phe Ile Asn Met Pro Ser Val Ala Lys Phe Val Thr Lys Ala Tyr Pro			
715	720	725	
gta tct ggc tcc cca gaa tac ctg aca gag gac cta cca gat agt att			3820

Val Ser Gly Ser Pro Glu Tyr Leu Thr Glu Asp Leu Pro Asp Ser Ile			
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Gln Val Gly Gly Arg Ile Ser Pro Gln Thr Val Trp Asp Tyr Val Glu			
745	750	755	
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Lys Ile Lys Ala Ser Gly Thr Lys Glu Ile Cys Val Val Arg Phe Thr			
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Pro Val Thr Glu Asp Gln Ile Ser Tyr Thr Leu Leu Phe Ala Tyr			
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Phe Ser Ser Arg Lys Arg Tyr Gly Val Ala Ala Asn Asn Met Lys Gln			
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Val Lys Asp Met Tyr Leu Ile Pro Leu Gly Ala Thr Asp Lys Ile Pro			
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His Pro Leu Val Pro Phe Asp Gly Pro Gly Leu Glu Leu His Arg Pro			
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Glu Pro Gly Ile Gln Gly Met Pro Gly Ala Ser Gly Leu Lys Gly Glu	
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Ile Gln Gly Gln Lys Gly Glu Asn Gly Arg Gln Gly Ile Pro Gly Gln	
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60 65 70	
ggc ctc ttt cag atg cgt ggc agt gac tgg tgt ggc gac cat ggc agg Gly Leu Phe Gln Met Arg Gly Ser Asp Trp Cys Gly Asp His Gly Arg	532
75 80 85	
aac cgc tgc cat atg tca tgt tcc gct tta ctg aat cct aat tta gag Asn Arg Cys His Met Ser Cys Ser Ala Leu Leu Asn Pro Asn Leu Glu	580
90 95 100 105	
aag aca att aaa tgt gcc aag acc att gta aaa gga aaa gaa ggg atg Lys Thr Ile Lys Cys Ala Lys Thr Ile Val Lys Gly Lys Glu Gly Met	628
110 115 120	
gga gca tgg ccc acc tgg tcc cgg tac tgc cag tac tcc gat acc ctg Gly Ala Trp Pro Thr Trp Ser Arg Tyr Cys Gln Tyr Ser Asp Thr Leu	676
125 130 135	
gca cgg tgg ctg gat ggt tgc aag ctg tag c cgccctgcatt gcccctgcag Ala Arg Trp Leu Asp Gly Cys Lys Leu *	727
140 145	
cactcaccag ttgcatcttg tgaatgaagg tgctttctg cttgctgctt cagtcaatcc	787
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1 5	
ctc cgg ggc gcg gcg ctg gcg ctg ctg gcg gcc cga gtg gtg Leu Arg Gly Ala Ala Leu Ala Leu Leu Leu Ala Ala Arg Val Val	161
10 15 20	
gcg gcg ttc gag ccc atc acc gtg ggc cta gcc atc ggg gcc gcg tcg Ala Ala Phe Glu Pro Ile Thr Val Gly Leu Ala Ile Gly Ala Ala Ser	209
25 30 35	
gcc atc acc ggc tac ctg tcc tac aat gac atc tac tgc cgc ttc gcc Ala Ile Thr Gly Tyr Leu Ser Tyr Asn Asp Ile Tyr Cys Arg Phe Ala	257
40 45 50	

gag tgc tgc cgc gag gag cgg ccg ctc aac gct tcg gct ctc aag ctg Glu Cys Cys Arg Glu Glu Arg Pro Leu Asn Ala Ser Ala Leu Lys Leu 55 60 65 70	305
gat ttg gag gag aag ctg ttt gga cag cat cta gcc acg gaa gtg att Asp Leu Glu Glu Lys Leu Phe Gly Gln His Leu Ala Thr Glu Val Ile 75 80 85	353
ttc aag gcg ctg act ggc ttc agg aac aac aaa aat ccc aag aaa cca Phe Lys Ala Leu Thr Gly Phe Arg Asn Asn Lys Asn Pro Lys Lys Pro 90 95 100	401
ctg acc ctt tcc tta cac ggc tgg gct ggc aca ggc aag aat ttt gtc Leu Thr Leu Ser Leu His Gly Trp Ala Gly Thr Gly Lys Asn Phe Val 105 110 115	449
agt caa att gtg gct gaa aat ctt cac cca aaa ggt ctg aag agt aac Ser Gln Ile Val Ala Glu Asn Leu His Pro Lys Gly Leu Lys Ser Asn 120 125 130	497
ttt gtc cac ctg ttt gta tcg act ctg cac ttc cct cat gag cag aag Phe Val His Leu Phe Val Ser Thr Leu His Phe Pro His Glu Gln Lys 135 140 145 150	545
ata aaa ctg tac ccg gac cag tta cag aag tgg atc cgc ggt aat gtg Ile Lys Leu Tyr Pro Asp Gln Leu Gln Lys Trp Ile Arg Gly Asn Val 155 160 165	593
agt gca tgt gcg aac tct gtt ttc ata ttt gac gag atg gat aaa ttg Ser Ala Cys Ala Asn Ser Val Phe Ile Phe Asp Glu Met Asp Lys Leu 170 175 180	641
cac ccc ggg atc att gac gca atc aag ccg ttt cta gac tac tac gag His Pro Gly Ile Ile Asp Ala Ile Lys Pro Phe Leu Asp Tyr Tyr Glu 185 190 195	689
cag gtt gac gga gtg tat tac cgc aaa gcc atc ttc atc ttt ctc agc Gln Val Asp Gly Val Tyr Tyr Arg Lys Ala Ile Phe Ile Phe Leu Ser 200 205 210	737
aat gca ggc ggg gac ctt ata act aag acg gct ctt gac ttt tgg cgg Asn Ala Gly Gly Asp Leu Ile Thr Lys Thr Ala Leu Asp Phe Trp Arg 215 220 225 230	785
gcc gga aga aag agg gaa gac att cag ctg aag gac ctg gaa cct gta Ala Gly Arg Lys Arg Glu Asp Ile Gln Leu Lys Asp Leu Glu Pro Val 235 240 245	833
ctg tct gtc gga gtc ttc aat aat aaa cac agt ggc ctg tgg cac agt Leu Ser Val Gly Val Phe Asn Asn Lys His Ser Gly Leu Trp His Ser 250 255 260	881
gga ctg atc gac aaa aac ctc att gat tac ttt atc ccc ttc ctg cct Gly Leu Ile Asp Lys Asn Leu Ile Asp Tyr Phe Ile Pro Phe Leu Pro 265 270 275	929
ttg gag tac aga cat gtg aaa atg tgt gtg atg gcc gag atg agg gcc Leu Glu Tyr Arg His Val Lys Met Cys Val Met Ala Glu Met Arg Ala 280 285 290	977
cgt ggt tct gcc ata gat gaa gac att gtc aca aga gtg gca gag gaa Arg Gly Ser Ala Ile Asp Glu Asp Ile Val Thr Arg Val Ala Glu Glu 295 300 305 310	1025



aaatatggta gaattaattt atgacatgga aatgccttac gtggtatcac acttagtctt	2652
aaaaaaaaaca ccaaggtgac gttaaaatt tttactacat atcctcaa at tggagctaag	2712
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Met Ala Gly Ala Ser Leu Gly Ala	
1 5	
cgc ttc tac cgg cag atc aaa aga cat ccg ggg atc atc ccg atg atc	159
Arg Phe Tyr Arg Gln Ile Lys Arg His Pro Gly Ile Ile Pro Met Ile	
10 15 20	
ggc tta atc tgc ctg ggc atg ggc agc gct gcg ctt tac ttg ctg cga	207
Gly Leu Ile Cys Leu Gly Met Gly Ser Ala Ala Leu Tyr Leu Leu Arg	
25 30 35 40	
ctc gcc ctt cgc agc ccc gac gtc tgc tgg gac aga aag aac aac ccg	255
Leu Ala Leu Arg Ser Pro Asp Val Cys Trp Asp Arg Lys Asn Asn Pro	
45 50 55	
gag ccc tgg aac cgc ctg agc ccc aat gac caa tac aag ttc ctt gca	303
Glu Pro Trp Asn Arg Leu Ser Pro Asn Asp Gln Tyr Lys Phe Leu Ala	
60 65 70	
gtt tcc act gac tat aag aag ctg aag aag gac cgg cca gac ttc taa	351
Val Ser Thr Asp Tyr Lys Lys Leu Lys Lys Asp Arg Pro Asp Phe *	
75 80 85	
gccaggctgg gctgccagtg ccatgcaagc cacagccagc cagcccatcc acttcttcca	411
ctcctccccc caggccccaa ggcactactc cggccaccct gtcccgctac tgcttacaca	471
ggccgggttc ccacgcagag gggaggctgc tccaccccta ctctccccc ttgctccag	531
cagcggaaagc gcctctgacc cttggcttga gtcccacgtg ggggaggagg aggcaggcag	591
caccagcagg ggtccaccaa gagcccagac cagccctct cccctctac ccgggcctcg	651
aagggtgtgg cacaggctac gtgttgagcg tggctacgt gagccaacaa gaagcagggg	711
cctctgagtg ccaagcgacg tggccggctc cacgttagcc caggctctga gagccagccc	771
agggcggcgt ctgctcagct tggctggtc cagggcctgc ccaggctgg gcacctttgc	831

ctcctgaggc gcagcgcaact cctccctgc ccaaggctac tgcctcccgc tgccgcccagt	891
acccctcca gccccacacc tgggcctccc cctgccactc ccctcccttg ctccccctcg	951
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aaaaa	1015

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	Met Arg Arg Leu Leu Leu Val Thr	
	1 5	
agc ctg gtg gtt gtg ctg ctg tgg gag gca ggt gca gtc cca gca ccc	159	
Ser Leu Val Val Val Leu Leu Trp Glu Ala Gly Ala Val Pro Ala Pro		
10 15 20		
aag gtc cct atc aag atg caa gtc aaa cac tgg ccc tca gag cag gac	207	
Lys Val Pro Ile Lys Met Gln Val Lys His Trp Pro Ser Glu Gln Asp		
25 30 35 40		
cca gag aag gcc tgg ggc gcc cgt gtg gtg gag cct ccg gag aag gac	255	
Pro Glu Lys Ala Trp Gly Ala Arg Val Val Glu Pro Pro Glu Lys Asp		
45 50 55		
gac cag ctg gtg gtg ctg ttc cct gtc cag aag ccg aaa ctc ttg acc	303	
Asp Gln Leu Val Val Leu Phe Pro Val Gln Lys Pro Lys Leu Leu Thr		
60 65 70		
acc gag gag aag cca cga ggc acc aag gcc tgg atg gag acc gag gac	351	
Thr Glu Glu Lys Pro Arg Gly Thr Lys Ala Trp Met Glu Thr Glu Asp		
75 80 85		
acc ctg ggc cgt gtc ctg agt ccc gag ccc gac cat gac agc ctg tac	399	
Thr Leu Gly Arg Val Leu Ser Pro Glu Pro Asp His Asp Ser Leu Tyr		
90 95 100		
cac cct ccg cct gag gag gac cag ggc gag gag agg ccc egg ttg tgg	447	
His Pro Pro Pro Glu Glu Asp Gln Gly Glu Arg Pro Arg Leu Trp		
105 110 115 120		
gtg atg cca aat cac cag gtg ctc ctg gga ccg gag gaa gac caa gac	495	
Val Met Pro Asn His Gln Val Leu Leu Gly Pro Glu Glu Asp Gln Asp		
125 130 135		
cac atc tac cac ccc cag tag gg ctccaggggc catcaactgcc cccgcctgt	548	
His Ile Tyr His Pro Gln *		
140		
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636

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ctctctacag agacgcggac cccagac atg agg agg ctc ctc ctg gtc acc	111
Met Arg Arg Leu Leu Leu Val Thr	
1 5	
agc ctg gtg gtt gtg ctg ctg tgg gag gca ggt gca gtc cca gca ccc	159
Ser Leu Val Val Val Leu Leu Trp Glu Ala Gly Ala Val Pro Ala Pro	
10 15 20	
aag gtc cct atc aag atg caa gtc aaa cac tgg ccc tca gag cag gac	207
Lys Val Pro Ile Lys Met Gln Val Lys His Trp Pro Ser Glu Gln Asp	
25 30 35 40	
cca gag aag gcc tgg ggc gcc cgt gtg gtg gag cct ccg gag aag gac	255
Pro Glu Lys Ala Trp Gly Ala Arg Val Val Glu Pro Pro Glu Lys Asp	
45 50 55	
gac cag ctg gtg gtg ttc cct gtc cag aag ccg aaa ctc ttg acc	303
Asp Gln Leu Val Val Leu Phe Pro Val Gln Lys Pro Lys Leu Leu Thr	
60 65 70	
acc gag gag aag cca cga ggt cag ggc agg ggc ccc atc ctt cca ggc	351
Thr Glu Glu Lys Pro Arg Gly Gln Gly Arg Gly Pro Ile Leu Pro Gly	
75 80 85	
acc aag gcc tgg atg gag acc gag gac acc ctg ggc cgt gtc ctg agt	399
Thr Lys Ala Trp Met Glu Thr Glu Asp Thr Leu Gly Arg Val Leu Ser	
90 95 100	
ccc gag ccc gac cat gac agc ctg tac cac ccc ccg cct gag gag gac	447
Pro Glu Pro Asp His Asp Ser Leu Tyr His Pro Pro Glu Glu Asp	
105 110 115 120	
cag ggc gag gag agg ccc cgg ttg tgg gtg atg cca aat cac cag gtg	495
Gln Gly Glu Glu Arg Pro Arg Leu Trp Val Met Pro Asn His Gln Val	
125 130 135	
ctc ctg gga ccg gag gaa gac caa gac cac atc tac cac ccc cag tag	543
Leu Leu Gly Pro Glu Glu Asp Gln Asp His Ile Tyr His Pro Gln *	
140 145 150	
ggctccaggg gccatcaactg ccccccct gtcccaaggc ccaggctgtt gggactggga	603
ccctccctac cctgccccag ctagacaaat aaaccccgagc aggccggaa aaaaaaaaaaa	663

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<400> 596

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tcc gtc gac ggc ctc acg ctc agc ccg gac ccg gag gag cgg cct ggg Ser Val Asp Gly Leu Thr Leu Ser Pro Asp Pro Glu Glu Arg Pro Gly 15               20               25		96
gcg gag ggc gcc ccg ctg ctg ccg cca ccg ctg cca ccg ccc tcg cca Ala Glu Gly Ala Pro Leu Leu Pro Pro Leu Pro Pro Pro Ser Pro 30               35               40		144
cct gga tcc ggt cgc ggc ccg ggc gcc tca ggg gag cag ccc gag ccc Pro Gly Ser Gly Arg Gly Pro Gly Ala Ser Gly Glu Gln Pro Glu Pro 45               50               55               60		192
ggg gag gcg gcg gct ggg ggc gcg gag gag gcg cgg cgg ctg gag Gly Glu Ala Ala Gly Ala Ala Glu Glu Ala Arg Arg Leu Glu 65               70               75		240
cag cgc tgg ggt ttc ggc ctg gag gag ttg tac ggc ctg gca ctg cgc Gln Arg Trp Gly Phe Gly Leu Glu Glu Leu Tyr Gly Leu Ala Leu Arg 80               85               90		288
ttc ttc aaa gaa aaa gat ggc aaa gca ttt cat cca act tat gaa gaa Phe Phe Lys Glu Lys Asp Gly Lys Ala Phe His Pro Thr Tyr Glu Glu 95               100               105		336
aaa ttg aag ctt gtg gca ctg cat aag caa gtt ctt atg ggc cca tat Lys Leu Lys Leu Val Ala Leu His Lys Gln Val Leu Met Gly Pro Tyr 110               115               120		384
aat cca gac act tgt cct gag gtt gga ttc ttt gat gtg ttg ggg aat Asn Pro Asp Thr Cys Pro Glu Val Gly Phe Phe Asp Val Leu Gly Asn 125               130               135               140		432
gac agg agg aga gaa tgg gca gcc ctg gga aac atg tct aaa gag gat Asp Arg Arg Arg Glu Trp Ala Ala Leu Gly Asn Met Ser Lys Glu Asp 145               150               155		480
gcc atg gtg gag ttt gtc aag ctc tta aat agg tgt tgc cat ctc ttt Ala Met Val Glu Phe Val Lys Leu Leu Asn Arg Cys Cys His Leu Phe 160               165               170		528
tca aca tat gtt gcg tcc cac aaa ata gag aag gaa gag caa gac aaa Ser Thr Tyr Val Ala Ser His Lys Ile Glu Lys Glu Gln Asp Lys 175               180               185		576
aaa agg aag gag gaa gag gag cga agg cat cgt gaa gag gaa gaa aga Lys Arg Lys Glu Glu Glu Glu Arg Arg His Arg Glu Glu Glu Glu Arg 190               195               200		624
gaa cgt ctg caa aag gag gaa gag aaa cgt agg aga gaa gag gaa		672

Glu Arg Leu Gln Lys Glu Glu Glu Lys Arg Arg Arg Glu Glu Glu Glu				
205	210	215	220	
agg ctt cga cgg gag gaa gag gaa agg aga cgg ata gaa gaa gaa agg				720
Arg Leu Arg Arg Glu Glu Glu Arg Arg Arg Ile Glu Glu Glu Arg				
225	230	235		
ctt cgg ttg gag cag caa aag cag cag ata atg gca gct tta aac tcc				768
Leu Arg Leu Glu Gln Gln Lys Gln Gln Ile Met Ala Ala Leu Asn Ser				
240	245	250		
cag act gcc gtg cag ttc cag cag tat gca gcc caa cag tat cca ggg				816
Gln Thr Ala Val Gln Phe Gln Gln Tyr Ala Ala Gln Gln Tyr Pro Gly				
255	260	265		
aac tac gaa cag cag caa att ctc atc cgc cag ttg cag gag caa cac				864
Asn Tyr Glu Gln Gln Ile Leu Ile Arg Gln Leu Gln Glu Gln His				
270	275	280		
tat cag cag tac atg cag cag ttg tat caa gtc cag ctt gca cag caa				912
Tyr Gln Gln Tyr Met Gln Gln Leu Tyr Gln Val Gln Leu Ala Gln Gln				
285	290	295	300	
cag gca gca tta cag aaa caa cag gaa gta gta gtg gct ggg tct tcc				960
Gln Ala Ala Leu Gln Gln Glu Val Val Val Ala Gly Ser Ser				
305	310	315		
ttg cct aca tca tca aaa gtg aat gca act gta cca agt aat atg atg				1008
Leu Pro Thr Ser Ser Lys Val Asn Ala Thr Val Pro Ser Asn Met Met				
320	325	330		
tca gtt aat gga cag gcc aaa aca cac act gac agc tcc gaa aaa gaa				1056
Ser Val Asn Gly Gln Ala Lys Thr His Thr Asp Ser Ser Glu Lys Glu				
335	340	345		
ctg gaa cca gaa gct gca gaa gaa gcc ctg gag aat gga cca aaa gaa				1104
Leu Glu Pro Glu Ala Ala Glu Glu Ala Leu Glu Asn Gly Pro Lys Glu				
350	355	360		
tct ctt cca gta ata gca gct cca tcc atg tgg aca cga cct cag atc				1152
Ser Leu Pro Val Ile Ala Ala Pro Ser Met Trp Thr Arg Pro Gln Ile				
365	370	375	380	
aaa gac ttc aaa gag aag att cag cag gat gca gat tcc gtg att aca				1200
Lys Asp Phe Lys Glu Lys Ile Gln Gln Asp Ala Asp Ser Val Ile Thr				
385	390	395		
gtg ggc cga gga gaa gtg gtc act gtt cga gta ccc acc cat gaa gaa				1248
Val Gly Arg Gly Glu Val Val Thr Val Arg Val Pro Thr His Glu Glu				
400	405	410		
gga tca tat ctc ttt tgg gaa ttt gcc aca gac aat tat gac att ggg				1296
Gly Ser Tyr Leu Phe Trp Glu Phe Ala Thr Asp Asn Tyr Asp Ile Gly				
415	420	425		
ttt ggg gtg tat ttt gaa tgg aca gac tct cca aac act gct gtc agc				1344
Phe Gly Val Tyr Phe Glu Trp Thr Asp Ser Pro Asn Thr Ala Val Ser				
430	435	440		
gtg cat gtc agt gag tcc agc gat gac gac gag gag gaa gaa aac				1392
Val His Val Ser Glu Ser Ser Asp Asp Asp Glu Glu Glu Glu Asn				
445	450	455	460	
atc ggt tgt gaa gag aaa gcc aaa aag aat gcc aac aag cct ttg ctg				1440

Ile	Gly	Cys	Glu	Glu	Lys	Ala	Lys	Asn	Ala	Asn	Lys	Pro	Leu	Leu	
465															475
gat gag att gtg cct gtg tac cga cgg gac tgt cat gag gag gtg tat														1488	
Asp	Glu	Ile	Val	Pro	Val	Tyr	Arg	Arg	Asp	Cys	His	Glu	Glu	Val	Tyr
480															490
gct ggc agc cat caa tat cca ggg aga gga gtc tat ctc ctc aag ttt														1536	
Ala	Gly	Ser	His	Gln	Tyr	Pro	Gly	Arg	Gly	Val	Tyr	Leu	Leu	Lys	Phe
495															505
gac aac tcc tac tct ttg tgg cgg tca aaa tca gtc tac tac aga gtc														1584	
Asp	Asn	Ser	Tyr	Ser	Leu	Trp	Arg	Ser	Lys	Ser	Val	Tyr	Tyr	Arg	Val
510															520
tat tat act aga taa aaatgttgtt acaaagtctg gagtcttaggg ttggggcagaa														1639	
Tyr	Tyr	Thr	Arg	*											
525															
gatgacattt aatttgaaaa ttctttta cttttgtgaa gcatttaggt cacagttac														1699	
cattttgata ttggctgtat ggtttgtgaa ctcttgctgg gaatcaaat ttcccttgaga	1759														
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 Met Glu Glu Leu Glu Lys Asp  
 1 5 .  
 cct cgc atc gca cag aag atc aag cga ttt agg aat aaa caa gcc cag 219  
 Pro Arg Ile Ala Gln Lys Ile Lys Arg Phe Arg Asn Lys Gln Ala Gln  
 10 15 20  
 atg aag cac att ttt acg gag gat tca gtg agg gac ttt gca aaa cct 267  
 Met Lys His Ile Phe Thr Glu Asp Ser Val Arg Asp Phe Ala Lys Pro  
 25 30 35  
 gag ggc agc tgc aag agg act gtc atg gtg gga atg ggg cat agg tgg 315  
 Glu Gly Ser Cys Lys Arg Thr Val Met Val Gly Met Gly His Arg Trp  
 40 45 50 55  
 aga gcg gac tgc aca atg cct gat gaa gac ttg ttc aat cca gac tat 363  
 Arg Ala Asp Cys Thr Met Pro Asp Glu Asp Leu Phe Asn Pro Asp Tyr  
 60 65 70  
 gta gaa gtt gat cgc atc ttg gag gtg gcc cac acc aag gat gca gaa 411  
 Val Glu Val Asp Arg Ile Leu Glu Val Ala His Thr Lys Asp Ala Glu  
 75 80 85  
 aca ggg gag gag gta aca cat tac ctg gtg aag tgg tgc tca cta cca 459  
 Thr Gly Glu Glu Val Thr His Tyr Leu Val Lys Trp Cys Ser Leu Pro  
 90 95 100  
 tat gaa gaa agc acg tgg gag cta gag gaa gat gta gat cct gca aaa 507  
 Tyr Glu Glu Ser Thr Trp Glu Leu Glu Asp Val Asp Pro Ala Lys  
 105 110 115

gtt aaa gaa ttt gaa tct ctt caa gtt ctc cct gaa att aag cat gtg Val Lys Glu Phe Glu Ser Leu Gln Val Leu Pro Glu Ile Lys His Val 120 125 130 135	555
gag cgg cct gct tca gac tcc tgg cag aaa ctt gag aag tct cgc gag Glu Arg Pro Ala Ser Asp Ser Trp Gln Lys Leu Glu Lys Ser Arg Glu 140 145 150	603
tat aag aac agt aac cag ctc cgg gag tac cag ctg gaa ggg atg aac Tyr Lys Asn Ser Asn Gln Leu Arg Glu Tyr Gln Leu Glu Gly Met Asn 155 160 165	651
tgg ctt ctt ttt aac tgg tat aac aga aaa aac tgt att ttg gct gat Trp Leu Leu Phe Asn Trp Tyr Asn Arg Lys Asn Cys Ile Leu Ala Asp 170 175 180	699
gag atg ggc cta ggg aaa acc atc cag tcc atc aca ttc ctt tca gaa Glu Met Gly Leu Gly Lys Thr Ile Gln Ser Ile Thr Phe Leu Ser Glu 185 190 195	747
ata ttt ctg aga gga atc cac ggc cct ttt ctc att atc gcc cct ctc Ile Phe Leu Arg Gly Ile His Gly Pro Phe Leu Ile Ala Pro Leu 200 205 210 215	795
tcc acc atc act aac tgg gag cgg gag ttc cgg aca tgg aca gag atg Ser Thr Ile Thr Asn Trp Glu Arg Glu Phe Arg Thr Trp Thr Glu Met 220 225 230	843
aat gcc att gtg tac cac ggc agc cag atc agc agg cag atg atc cag Asn Ala Ile Val Tyr His Gly Ser Gln Ile Ser Arg Gln Met Ile Gln 235 240 245	891
cag tat gaa atg gtg tac aga gac gcc cag gga aac ccc ctt tca gga Gln Tyr Glu Met Val Tyr Arg Asp Ala Gln Gly Asn Pro Leu Ser Gly 250 255 260	939
gtc ttc aag ttc cac gtc atc aca aca ttt gaa atg atc cta gca Val Phe Lys Phe His Val Val Ile Thr Thr Phe Glu Met Ile Leu Ala 265 270 275	987
gac tgc cca gag ttg aag aag att cac tgg agc tgt gtg ata att gat Asp Cys Pro Glu Leu Lys Ile His Trp Ser Cys Val Ile Ile Asp 280 285 290 295	1035
gaa gcc cac aga ctg aag aat agg aac tgc aaa ctt ctg gag ggt cta Glu Ala His Arg Leu Lys Asn Arg Asn Cys Lys Leu Leu Glu Gly Leu 300 305 310	1083
aag ctt atg gcc ctg gaa cat aaa gtg ctt ctc act gga aca ccc ttg Lys Leu Met Ala Leu Glu His Lys Val Leu Leu Thr Gly Thr Pro Leu 315 320 325	1131
cag aac tct gtg gag gag ctc ttc agt ttg tta aat ttt ctg gag cca Gln Asn Ser Val Glu Glu Leu Phe Ser Leu Leu Asn Phe Leu Glu Pro 330 335 340	1179
tca cag ttt cct tca gag acc gct ttc ttg gag gaa ttt gga gat ctg Ser Gln Phe Pro Ser Glu Thr Ala Phe Leu Glu Phe Gly Asp Leu 345 350 355	1227
aaa aca gag gag cag gta aag aaa ctg cag tct atc cta aaa cca atg Lys Thr Glu Glu Gln Val Lys Lys Leu Gln Ser Ile Leu Lys Pro Met 360 365 370 375	1275

atg ctt cg <sup>g</sup> ctg aaa gat gat gtg gaa aag aac ctt gct ccc aaa Met Leu Arg Arg Leu Lys Asp Asp Val Glu Lys Asn Leu Ala Pro Lys 380 385 390	1323
caa gag acg atc att gag gtg gaa ctg acc aat atc cag aaa aag tac Gln Glu Thr Ile Ile Glu Val Glu Leu Thr Asn Ile Gln Lys Lys Tyr 395 400 405	1371
tac cgt gcc atc ctc gag aag aac ttt tcc ttc ctg acc aag ggg gca Tyr Arg Ala Ile Leu Glu Lys Asn Phe Ser Phe Leu Thr Lys Gly Ala 410 415 420	1419
aat cag cac aac atg ccc aat ctc atc aac acc atg gag ctg agg Asn Gln His Asn Met Pro Asn Leu Ile Asn Thr Met Met Glu Leu Arg 425 430 435	1467
aag tgc tgt aac cat ccc tac ctg atc aat gga gca gag gag aaa att Lys Cys Cys Asn His Pro Tyr Leu Ile Asn Gly Ala Glu Glu Lys Ile 440 445 450 455	1515
cta gaa gat ttc cga aaa acc cac agc cct gat gcc cct gac ttt cag Leu Glu Asp Phe Arg Lys Thr His Ser Pro Asp Ala Pro Asp Phe Gln 460 465 470	1563
ctg cag gcc atg att cag gca gca gga aag ctt gtg ttg att gat aaa Leu Gln Ala Met Ile Gln Ala Ala Gly Lys Leu Val Leu Ile Asp Lys 475 480 485	1611
cta ctc cct aag ctg att gca ggt ggc cac aaa gta ctc atc ttc tcc Leu Leu Pro Lys Leu Ile Ala Gly Gly His Lys Val Leu Ile Phe Ser 490 495 500	1659
cag atg gtg cgc tgc ctc gac atc cta gaa gat tac ctc atc cag aga Gln Met Val Arg Cys Leu Asp Ile Leu Glu Asp Tyr Leu Ile Gln Arg 505 510 515	1707
aga tac acc tat gag cga att gat ggg cga gta cgg gga aac ctg cgc Arg Tyr Thr Tyr Glu Arg Ile Asp Gly Arg Val Arg Gly Asn Leu Arg 520 525 530 535	1755
cag gca gcc atc gac cgg ttc tgt aag cca gat tca gac cgc ttt gtc Gln Ala Ala Ile Asp Arg Phe Cys Lys Pro Asp Ser Asp Arg Phe Val 540 545 550	1803
ttt ctt ctg tgc acc aga gcg gga ggc ctg ggg atc aat ctc aca gct Phe Leu Leu Cys Thr Arg Ala Gly Gly Leu Gly Ile Asn Leu Thr Ala 555 560 565	1851
gct gat acc tgc atc ata ttt gat tct gac tgg aac cca caa aat gac Ala Asp Thr Cys Ile Ile Phe Asp Ser Asp Trp Asn Pro Gln Asn Asp 570 575 580	1899
ttg cag gtc cct gaa ggc aga att cag aaa gtg tgg gag cag atg tcc Leu Gln Val Pro Glu Gly Arg Ile Gln Lys Val Trp Glu Gln Met Ser 585 590 595	1947
tgg cca aga gca cag cca caa gat aat gca gct gct gca tgt ctg cag Trp Pro Arg Ala Gln Pro Gln Asp Asn Ala Ala Ala Cys Leu Gln 600 605 610 615	1995
gat ttt gga agt cag ttg gga gtc cag agt gag gag aca ggc cct ttc Asp Phe Gly Ser Gln Leu Gly Val Gln Ser Glu Glu Thr Gly Pro Phe 620 625 630	2043

cac aat cgc cag aag cag gac tca gga aac tcc cac act gct ccg agg His Asn Arg Gln Lys Gln Asp Ser Gly Asn Ser His Thr Ala Pro Arg 635 640 645	2091
gga aga gta ctt act ggg ctt ctt agt gtt tgg gcc gct tta gta cta Gly Arg Val Leu Thr Gly Leu Leu Ser Val Trp Ala Ala Leu Val Leu 650 655 660	2139
agt ata gga att ctg gtg tca ttt tca gcc atg agg tta ggg gaa gaa Ser Ile Gly Ile Leu Val Ser Phe Ser Ala Met Arg Leu Gly Glu Glu 665 670 675	2187
tgt ggg cag ggc atg ggt ggg ggc ttc cat atc cag gga ttc tgg cac Cys Gly Gln Gly Met Gly Gly Phe His Ile Gln Gly Phe Trp His 680 685 690 695	2235
tgg gct cag gcc cga tgt cac cgc ata ggc cag agc aaa gct gtg aag Trp Ala Gln Ala Arg Cys His Arg Ile Gly Gln Ser Lys Ala Val Lys 700 705 710	2283
gtg tat cgc ctc atc act cga aat tcc tac gag cgc gag atg ttt gac Val Tyr Arg Leu Ile Thr Arg Asn Ser Tyr Glu Arg Glu Met Phe Asp 715 720 725	2331
aag gcc agc cta aag ctg ggg ctg gac aag gct gtt ctt cag gac atc Lys Ala Ser Leu Lys Leu Gly Leu Asp Lys Ala Val Leu Gln Asp Ile 730 735 740	2379
aac cga aag ggc ggc acc aat ggg gta cag cag ctc tca aaa atg gag Asn Arg Lys Gly Gly Thr Asn Gly Val Gln Ieu Ser Lys Met Glu 745 750 755	2427
gtg gag gac cta ctc cgg aaa ggt gct tat gga gcc tta atg gat gaa Val Glu Asp Leu Leu Arg Lys Gly Ala Tyr Gly Ala Leu Met Asp Glu 760 765 770 775	2475
gaa gat gaa ggc tcc aag ttc tgt gaa gaa gac ata gac cag att ctg Glu Asp Glu Gly Ser Lys Phe Cys Glu Glu Asp Ile Asp Gln Ile Leu 780 785 790	2523
cag agg cga acg cac acc atc acc atc cag tct gag ggg aaa ggg tcc Gln Arg Arg Thr His Thr Ile Thr Ile Gln Ser Glu Gly Lys Gly Ser 795 800 805	2571
act ttt gcc aag gct agc ttt gtg gct tca gga aac aga aca gat att Thr Phe Ala Lys Ala Ser Phe Val Ala Ser Gly Asn Arg Thr Asp Ile 810 815 820	2619
tcc tta gat gat cct aac ttt tgg cag aaa tgg gct aaa ata gct gaa Ser Leu Asp Asp Pro Asn Phe Trp Gln Lys Trp Ala Lys Ile Ala Glu 825 830 835	2667
cta gac act gaa gca aag aat gaa aag gaa agc tta gtg atc gac cga Leu Asp Thr Glu Ala Lys Asn Glu Lys Glu Ser Leu Val Ile Asp Arg 840 845 850 855	2715
cct cgc gtg aga aag cag acc aaa cac tac aac tcg ttt gag gaa gac Pro Arg Val Arg Lys Gln Thr Lys His Tyr Asn Ser Phe Glu Glu Asp 860 865 870	2763
gag ctc atg gag ttt tca gag tta gac agc gac tca gac gaa agg ccc Glu Leu Met Glu Phe Ser Glu Leu Asp Ser Asp Ser Asp Glu Arg Pro 875 880 885	2811

acg aga tcc agg cgc ctc aat gac aaa gcc agg cgc tac ctc cga gcg Thr Arg Ser Arg Arg Leu Asn Asp Lys Ala Arg Arg Tyr Leu Arg Ala 890 895 900	2859
gag tgc ttc cgg gta gag aag aac ctg ctc atc ttt ggc tgg ggc cgg Glu Cys Phe Arg Val Glu Lys Asn Leu Leu Ile Phe Gly Trp Gly Arg 905 910 915	2907
tgg aag gac atc ctg act cat ggc cga ttc aag tgg cat ctg aac gag Trp Lys Asp Ile Leu Thr His Gly Arg Phe Lys Trp His Leu Asn Glu 920 925 930 935	2955
aag gac atg gag atg att tgc cgt gcc ctc ctg gtg tac tgt gtc aag Lys Asp Met Glu Met Ile Cys Arg Ala Leu Leu Val Tyr Cys Val Lys 940 945 950	3003
cat tat aag ggg gac gag aag atc aag agt ttc att tgg gaa ctg atc His Tyr Lys Gly Asp Glu Lys Ile Lys Ser Phe Ile Trp Glu Leu Ile 955 960 965	3051
aca cct acc aaa gat ggg caa gcc cag acc ctc cag aac cac tca ggc Thr Pro Thr Lys Asp Gly Gln Ala Gln Thr Leu Gln Asn His Ser Gly 970 975 980	3099
tta tct gcc cca gtc ccc aga ggg agg aag ggg aag aag acg aag aac Leu Ser Ala Pro Val Pro Arg Gly Arg Lys Gly Lys Thr Lys Asn 985 990 995	3147
cag ttg cta atc cca gag cta aag gat gca gat tgg cta gcc acc tgc Gln Leu Leu Ile Pro Glu Leu Lys Asp Ala Asp Trp Leu Ala Thr Cys 1000 1005 1010 1015	3195
aac ccc gag gtg gtc ttg cat gat gat ggc tat aag aaa cac ctc aaa Asn Pro Glu Val Val Leu His Asp Asp Gly Tyr Lys Lys His Leu Lys 1020 1025 1030	3243
cag cac tgc aac aaa gta ctt ttg cga gtc cgg atg ctg tac tac cta Gln His Cys Asn Lys Val Leu Leu Arg Val Arg Met Leu Tyr Tyr Leu 1035 1040 1045	3291
aaa gct gaa ata ctg gga gaa gca gct gag aaa gca ttt gaa gga tct Lys Ala Glu Ile Leu Gly Glu Ala Ala Glu Lys Ala Phe Glu Gly Ser 1050 1055 1060	3339
cct gcc agg gag ctg gat gta cct ctg cct gac atc gac tac atg gag Pro Ala Arg Glu Leu Asp Val Pro Leu Pro Asp Ile Asp Tyr Met Glu 1065 1070 1075	3387
atc cca gtg gac tgg tgg gat gct gaa gcc gat aag tca ctt ctc att Ile Pro Val Asp Trp Trp Asp Ala Glu Ala Asp Lys Ser Leu Leu Ile 1080 1085 1090 1095	3435
ggc gtg ttc aag cat ggt tat gaa agg tac aat gcc atg cga gca gac Gly Val Phe Lys His Gly Tyr Glu Arg Tyr Asn Ala Met Arg Ala Asp 1100 1105 1110	3483
cca gca ctt tgc ttc ctg gag aaa gtt ggg atg ccc gat gag aag tcc Pro Ala Leu Cys Phe Leu Glu Lys Val Gly Met Pro Asp Glu Lys Ser 1115 1120 1125	3531
ctt tct gca gaa cag ggt gtt aca gat ggg acc tca gac att cct gaa Leu Ser Ala Glu Gln Gly Val Thr Asp Gly Thr Ser Asp Ile Pro Glu 1130 1135 1140	3579

aga ggc aac aca gat aaa gaa gac aat gct gag gac aaa gta gat ggc Arg Gly Asn Thr Asp Lys Glu Asp Asn Ala Glu Asp Lys Val Asp Gly 1145 1150 1155	3627
ctc cag aaa caa acg gag agt tcc agt gat gga ggt gat ggc gtt ttt Leu Gln Lys Gln Thr Glu Ser Ser Asp Gly Gly Asp Gly Val Phe 1160 1165 1170 1175	3675
agc gaa aag aag gat gac agc cgg gca gct cgt ctc aga cgt ctg gtc Ser Glu Lys Lys Asp Asp Ser Arg Ala Ala Arg Leu Arg Arg Leu Val 1180 1185 1190	3723
act gtt tac cag cgc tgc aac cgc aag gaa ctg tgc cgg cct gaa att Thr Val Tyr Gln Arg Cys Asn Arg Lys Glu Leu Cys Arg Pro Glu Ile 1195 1200 1205	3771
ctg gga cca ggt aac caa gga tat tgg gtt cag gaa gag atg ttc agg Leu Gly Pro Gly Asn Gln Gly Tyr Trp Val Gln Glu Glu Met Phe Arg 1210 1215 1220	3819
aga acc tca gaa atg gac ctc atc aac aag gaa gcc caa aag agg tgg Arg Thr Ser Glu Met Asp Leu Ile Asn Lys Glu Ala Gln Lys Arg Trp 1225 1230 1235	3867
act agg aga gaa caa gca gac ttc tat aga aca gtg tct tcc ttt ggt Thr Arg Arg Glu Gln Ala Asp Phe Tyr Arg Thr Val Ser Ser Phe Gly 1240 1245 1250 1255	3915
gtt gtt tac gat caa gaa aag aaa acc ttt gac tgg aca cag ttc cgc Val Val Tyr Asp Gln Glu Lys Lys Thr Phe Asp Trp Thr Gln Phe Arg 1260 1265 1270	3963
atc att tcc cgt ttg gac aag aag tcg gat gag agc ctg gaa cag tat Ile Ile Ser Arg Leu Asp Lys Ser Asp Glu Ser Leu Glu Gln Tyr 1275 1280 1285	4011
ttt tat agt ttt gtg gcc atg tgc cgg aat gtc tgt cgt cta ccc aca Phe Tyr Ser Phe Val Ala Met Cys Arg Asn Val Cys Arg Leu Pro Thr 1290 1295 1300	4059
tgg aaa gat ggc ggt ccc cca gat acc acc atc tac gtt gaa ccc atc Trp Lys Asp Gly Gly Pro Pro Asp Thr Thr Ile Tyr Val Glu Pro Ile 1305 1310 1315	4107
act gag gaa cgt gca aga act ctg tac cgc att gaa ctg tta cgg Thr Glu Glu Arg Ala Ala Arg Thr Leu Tyr Arg Ile Glu Leu Leu Arg 1320 1325 1330 1335	4155
aaa gtc cga gag caa gtg ctc aag tgc cct cag ctg cat gaa cgc ctc Lys Val Arg Glu Gln Val Leu Lys Cys Pro Gln Leu His Glu Arg Leu 1340 1345 1350	4203
cag ctg tgc agg ccc agc ctc tac ctc cca gtc tgg tgg gag tgt ggg Gln Leu Cys Arg Pro Ser Leu Tyr Leu Pro Val Trp Trp Glu Cys Gly 1355 1360 1365	4251
aag cat gat cga gac ctg ctc atc ggc act gcc aaa cat ggg ctg aac Lys His Asp Arg Asp Leu Leu Ile Gly Thr Ala Lys His Gly Leu Asn 1370 1375 1380	4299
cgc act gac tgt tac atc atg aac gac ccc cag ctg tcc ttc ctg gat Arg Thr Asp Cys Tyr Ile Met Asn Asp Pro Gln Leu Ser Phe Leu Asp 1385 1390 1395	4347

gcc tat aga aac tat gcc cag cat aaa aga tct ggc acc cag gca cca Ala Tyr Arg Asn Tyr Ala Gln His Lys Arg Ser Gly Thr Gln Ala Pro	4395
1400 1405 1410 1415	
gga aat ctc tgt tgc ctt tac cag acc aac tcc aag tta tat gaa tct Gly Asn Leu Cys Cys Leu Tyr Gln Thr Asn Ser Lys Leu Tyr Glu Ser	4443
1420 1425 1430	
ctt aca tat tct caa atg agt agg act tca gag tcc ctt gaa aat gaa Leu Thr Tyr Ser Gln Met Ser Arg Thr Ser Glu Ser Leu Glu Asn Glu	4491
1435 1440 1445	
cct gaa aat cta gtg aga gta gaa agc aga gat gat cat ctc agc ctg Pro Glu Asn Leu Val Arg Val Glu Ser Arg Asp Asp His Leu Ser Leu	4539
1450 1455 1460	
cct gat gtg aca tgt gaa aac ttt att tct aaa gtt cag gat gtc att Pro Asp Val Thr Cys Glu Asn Phe Ile Ser Lys Val Gln Asp Val Ile	4587
1465 1470 1475	
tcc atc aac cat gat gaa agt ctg ctg cct gag tcc tta gag agc atg Ser Ile Asn His Asp Glu Ser Leu Leu Pro Glu Ser Leu Glu Ser Met	4635
1480 1485 1490 1495	
atg tat ggt aag aag gtg ctc agc caa gaa cca agc tct ttt cag gag Met Tyr Gly Lys Lys Val Leu Ser Gln Glu Pro Ser Ser Phe Gln Glu	4683
1500 1505 1510	
agc cca agt acc aat act gaa tct aga aaa gat gtt att acc atc tca Ser Pro Ser Thr Asn Thr Glu Ser Arg Lys Asp Val Ile Thr Ile Ser	4731
1515 1520 1525	
ata agc aaa gat ggg aac tgc cag tct ggt ggc cct gag gca gaa ata Ile Ser Lys Asp Gly Asn Cys Gln Ser Gly Gly Pro Glu Ala Glu Ile	4779
1530 1535 1540	
gct tct ggc cct act ttt atg ggt agc tta gaa gca gga gga gta gct Ala Ser Gly Pro Thr Phe Met Gly Ser Leu Glu Ala Gly Gly Val Ala	4827
1545 1550 1555	
caa gca aac atc aaa aat gga aaa cat ttg ttg atg tct att tca aag Gln Ala Asn Ile Lys Asn Gly Lys His Leu Leu Met Ser Ile Ser Lys	4875
1560 1565 1570 1575	
gaa ggg gag ctc tgc tgc agt gag gca gga cag aga cct gaa aac att Glu Gly Glu Leu Cys Cys Ser Glu Ala Gly Gln Arg Pro Glu Asn Ile	4923
1580 1585 1590	
ggc cag ctg gaa gcc aag tgt tta gct tcc cct tcc ttg aat cca gga Gly Gln Leu Glu Ala Lys Cys Leu Ala Ser Pro Ser Leu Asn Pro Gly	4971
1595 1600 1605	
aat gaa agt ggg ttt gta gat atg tgc agt ctt agt gtc tgt gac tcc Asn Glu Ser Gly Phe Val Asp Met Cys Ser Leu Ser Val Cys Asp Ser	5019
1610 1615 1620	
aaa aga aac ctg tca tca gat cag caa tta att gat tta ttg gaa aac Lys Arg Asn Leu Ser Ser Asp Gln Gln Leu Ile Asp Leu Leu Glu Asn	5067
1625 1630 1635	
aaa agc tta gaa agt aaa ttg att ttg agt cag aac cac agt gat gag Lys Ser Leu Glu Ser Lys Leu Ile Leu Ser Gln Asn His Ser Asp Glu	5115
1640 1645 1650 1655	

gag gaa gaa gag gag gaa aac gag gag gaa aac tta gcc atg gca gta Glu Glu Glu Glu Glu Asn Glu Glu Asn Leu Ala Met Ala Val 1660 1665 1670	5163
ggc atg ggg gaa agg cca gag gta ttg cat ctc acg gag ccc act act Gly Met Gly Glu Arg Pro Glu Val Leu His Leu Thr Glu Pro Thr Thr 1675 1680 1685	5211
aac atc tca agg gaa aag aac caa ggc ttc caa gat gaa acc aag aaa Asn Ile Ser Arg Glu Lys Asn Gln Gly Phe Gln Asp Glu Thr Lys Lys 1690 1695 1700	5259
gga agc tta gag gtg gca aac cag act cct ggg cta cag agg gct ttc Gly Ser Leu Glu Val Ala Asn Gln Thr Pro Gly Leu Gln Arg Ala Phe 1705 1710 1715	5307
ccc gct cca gca gcc tgt cag tgc cac tgc aaa cac atg gag agg tgg Pro Ala Pro Ala Ala Cys Gln Cys His Cys Lys His Met Glu Arg Trp 1720 1725 1730 1735	5355
atg cat ggc ctc gag aat gat gaa ttt gaa atc gag aaa ccc aag gct Met His Gly Leu Glu Asn Asp Glu Phe Glu Ile Glu Lys Pro Lys Ala 1740 1745 1750	5403
tat atc cca gat ctg ttc aaa agt aaa acc aat act atc gcc atg gag Tyr Ile Pro Asp Leu Phe Lys Ser Lys Thr Asn Thr Ile Ala Met Glu 1755 1760 1765	5451.
ggt gaa ccc act gct att cca tca cag ccg ttt aaa gtg aag cat gag Gly Glu Pro Thr Ala Ile Pro Ser Gln Pro Phe Lys Val Lys His Glu 1770 1775 1780	5499
ctt tta aaa gaa cct tgg aaa gaa agt gca gag ggg caa aac gtt ttc Leu Leu Lys Glu Pro Trp Lys Glu Ser Ala Glu Gly Gln Asn Val Phe 1785 1790 1795	5547
ccc aca tat cct ctt gaa gga agt gag ctc aaa tca gaa gac atg gat Pro Thr Tyr Pro Leu Glu Gly Ser Glu Leu Lys Ser Glu Asp Met Asp 1800 1805 1810 1815	5595
ttt gag aat aaa gat gat tat gat aga gac gga aac tgc cat agt caa Phe Glu Asn Lys Asp Asp Tyr Asp Arg Asp Gly Asn Cys His Ser Gln 1820 1825 1830	5643
gat tat cca ggg aag tac tct gaa gag gag agc aag agc tca aca tcg Asp Tyr Pro Gly Lys Tyr Ser Glu Glu Ser Lys Ser Ser Thr Ser 1835 1840 1845	5691
ggc atc aca gga gac att ggg gat gag cta cag gag gct cga gct ccc Gly Ile Thr Gly Asp Ile Gly Asp Glu Leu Gln Glu Ala Arg Ala Pro 1850 1855 1860	5739
act att gct cag ctg cta cag gag aaa act ctc tat tcc ttc tct gag Thr Ile Ala Gln Leu Leu Gln Glu Lys Thr Leu Tyr Ser Phe Ser Glu 1865 1870 1875	5787
tgg cca aag gac cgc gtg ata att aac cgc cta gat aat atc tgc cac Trp Pro Lys Asp Arg Val Ile Ile Asn Arg Leu Asp Asn Ile Cys His 1880 1885 1890 1895	5835
gtg gtg tta aag ggg aag tgg ccc tct agc cag cag tat gag ccc tca Val Val Leu Lys Gly Lys Trp Pro Ser Ser Gln Gln Tyr Glu Pro Ser 1900 1905 1910	5883

ggc aca ctg ccc acc ccg gta tta acc agc agt gct ggt tct cga acc Gly Thr Leu Pro Thr Pro Val Leu Thr Ser Ser Ala Gly Ser Arg Thr 1915 1920 1925	5931
agc ctc tca gag ccg gaa gca gca gaa cac agc ttc agc aac ggc gca Ser Leu Ser Glu Pro Glu Ala Ala Glu His Ser Phe Ser Asn Gly Ala 1930 1935 1940	5979
gca ttg gcg gcc cag atc cac aag gag agc ttc tta gct cca gta ttc Ala Leu Ala Ala Gln Ile His Lys Glu Ser Phe Leu Ala Pro Val Phe 1945 1950 1955	6027
aca aag gat gaa caa aag cac agg cgt ccc tat gag ttt gag gtg gag Thr Lys Asp Glu Gln Lys His Arg Arg Pro Tyr Glu Phe Glu Val Glu 1960 1965 1970 1975	6075
agg gat gca aag gct cgg ggc ctg gag cag ttc tct gcc acc cac ggg Arg Asp Ala Lys Ala Arg Gly Leu Glu Gln Phe Ser Ala Thr His Gly 1980 1985 1990	6123
cac acc cct atc atc ctc aat ggc tgg cat ggg gag tca gct atg gac His Thr Pro Ile Ile Leu Asn Gly Trp His Gly Glu Ser Ala Met Asp 1995 2000 2005	6171
ctc tcc tgc tca tca gag ggg tcc cca gga gcc aca tcc cct ttc cca Leu Ser Cys Ser Ser Glu Gly Ser Pro Gly Ala Thr Ser Pro Phe Pro 2010 2015 2020	6219
gtg agc gcc agc acc cct aag att ggg gct atc agt tca ctt cag gga Val Ser Ala Ser Thr Pro Lys Ile Gly Ala Ile Ser Ser Leu Gln Gly 2025 2030 2035	6267
gcc ctt ggc atg gac ttg tct ggg att ctg caa gct ggc ctg atc cat Ala Leu Gly Met Asp Leu Ser Gly Ile Leu Gln Ala Gly Leu Ile His 2040 2045 2050 2055	6315
cct gtg act gga cag att gtc aat gga agc ctc aga aga gat gat gca Pro Val Thr Gly Gln Ile Val Asn Gly Ser Leu Arg Arg Asp Asp Ala 2060 2065 2070	6363
gcc acg agg agg cgg aga ggg agg cgg aaa cat gtt gaa gga ggg atg Ala Thr Arg Arg Arg Gly Arg Arg Lys His Val Glu Gly Gly Met 2075 2080 2085	6411
gac ctc atc ttt ttg aag gag cag aca ctt cag gcg gga atc ttg gaa Asp Leu Ile Phe Leu Lys Glu Gln Thr Leu Gln Ala Gly Ile Leu Glu 2090 2095 2100	6459
gtc cat gaa gac cca ggg cag gcc acc ttg agc acc aca cac cct gag Val His Glu Asp Pro Gly Gln Ala Thr Leu Ser Thr Thr His Pro Glu 2105 2110 2115	6507
ggg cca ggg cct gcc acc tcg gct cct gag cca gct acg gca gcc agc Gly Pro Gly Pro Ala Thr Ser Ala Pro Glu Pro Ala Thr Ala Ala Ser 2120 2125 2130 2135	6555
agc caa gcc gag aaa tcc att ccc agc aag agt ctg ctt gac tgg cta Ser Gln Ala Glu Lys Ser Ile Pro Ser Lys Ser Leu Leu Asp Trp Leu 2140 2145 2150	6603
agg cag cag gct gac tac tcc tta gaa gtt cct ggc ttt ggg gca ggg Arg Gln Gln Ala Asp Tyr Ser Leu Glu Val Pro Gly Phe Gly Ala Gly 2155 2160 2165	6651

ttt ctt cca gaa aac aag ttc aat cac act ctg gct gag cct att ctt Phe Leu Pro Glu Asn Lys Phe Asn His Thr Leu Ala Glu Pro Ile Leu 2170 2175 2180	6699
cga gat acg ggc ccc cgc agg agg ggg agg cgg cct cgg agc gaa ctc Arg Asp Thr Gly Pro Arg Arg Arg Gly Arg Arg Pro Arg Ser Glu Leu 2185 2190 2195	6747
ctg aag gct cct tcc att gtg gca gac tct ccc tct gga atg ggg cca Leu Lys Ala Pro Ser Ile Val Ala Asp Ser Pro Ser Gly Met Gly Pro 2200 2205 2210 2215	6795
ctg ttc atg aat gga ctg att gct ggg atg gac ctg gta gga ctt cag Leu Phe Met Asn Gly Leu Ile Ala Gly Met Asp Leu Val Gly Leu Gln 2220 2225 2230	6843
aac atg aga aat atg cca ggc atc ccc ctc acc ggg ctg gtg ggg ttt Asn Met Arg Asn Met Pro Gly Ile Pro Leu Thr Gly Leu Val Gly Phe 2235 2240 2245	6891
cca gct ggc ttt gcc acg atg cca aca ggt gaa gag gtc aaa agt acc Pro Ala Gly Phe Ala Thr Met Pro Thr Gly Glu Glu Val Lys Ser Thr 2250 2255 2260	6939
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80 85 90	
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95 100 105	
 tct gcc cag aat aat ggc tca cca gcc cag gag ata aca gga agt gac Ser Ala Gln Asn Asn Gly Ser Pro Ala Gln Glu Ile Thr Gly Ser Asp	565
110 115 120	
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270 275 280	

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cacgcgtccg gcacaccctt tactggccgg ccccgcgctg	cttcctaag accccgcggg	180	
ccagcgccgc gacccttcc cagcgctcct cgcgctgtgt	gcggcgcgtc ctctcgccgg	240	
tgaccgggtg tgctgtgggt cgaggcgccg ggccggagtgg	ctccggcccg aaacgcc	297	
atg cgg agg ggc gag cgc agg gac gca ggt cgg	cg ccc gag tcc	345	
Met Arg Arg Gly Glu Arg Arg Asp Ala Gly	Gly Pro Arg Pro Glu Ser		
1	5	10	15
ccg gtg ccc ggc agg gcc tcg ctg gag gag	ccg cct gac ggg ccg	393	
Pro Val Pro Ala Gly Arg Ala Ser	Leu Glu Glu Pro Pro Asp Gly Pro		
20	25	30	
tct gcc ggc caa gcc acc ggg ccg ggc gag ggc	cgcc acc acc gag	441	
Ser Ala Gly Gln Ala Thr Gly Pro Gly Glu Gly	Arg Arg Ser Thr Glu		
35	40	45	
tcc gag gtc tac gac gac ggc acc aac acc	ttc ttc tgg cga gcc cac	489	
Ser Glu Val Tyr Asp Asp Gly Thr Asn Thr Phe	Phe Trp Arg Ala His		
50	55	60	
acc tta acc gtg ctc ttc atc ctc acc tgt acg	ctt ggc tat gtg acg	537	
Thr Leu Thr Val Leu Phe Ile Leu Thr Cys	Thr Leu Gly Tyr Val Thr		
65	70	75	80
ctg ctg gag gaa aca cct cag gac acg gcc	tac aac acc aag aga ggt	585	
Leu Leu Glu Glu Thr Pro Gln Asp Thr Ala	Tyr Asn Thr Lys Arg Gly		
85	90	95	
att gtg gcc agt att ttg gtt ttc tta tgt	ttt gga gtc aca caa gct	633	
Ile Val Ala Ser Ile Leu Val Phe Leu Cys	Phe Gly Val Thr Gln Ala		
100	105	110	
aaa gac ggg cca ttt tcc aga cct cat cca	gct tac tgg agg ttt tgg	681	
Lys Asp Gly Pro Phe Ser Arg Pro His Pro	Ala Tyr Trp Arg Phe Trp		
115	120	125	
ctc tgc gtg agt gtg gtc tac gag ctg	ttt ctc atc ttt ata ctc ttc	729	
Leu Cys Val Ser Val Val Tyr Glu Leu Phe	Leu Ile Phe Ile Leu Phe		
130	135	140	
cag act gtc cag gac ggc cgg cag ttt cta	aag tat gtt gac ccc aag	777	
Gln Thr Val Gln Asp Gly Arg Gln Phe Leu	Lys Tyr Val Asp Pro Lys		
145	150	155	160

ctg gga gtc cca ctg cca gag aga gac tac ggg gga aac tgc ctc atc Leu Gly Val Pro Leu Pro Glu Arg Asp Tyr Gly Gly Asn Cys Leu Ile 165 170 175	825
tac gac cca gac aat gag act gac ccc ttt cac aac atc tgg gac aag Tyr Asp Pro Asp Asn Glu Thr Asp Pro Phe His Asn Ile Trp Asp Lys 180 185 190	873
ttg gat ggc ttt gtt ccc gcg cac ttt ctt ggc tgg tac ctg aag acc Leu Asp Gly Phe Val Pro Ala His Phe Leu Gly Trp Tyr Leu Lys Thr 195 200 205	921
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tgc tgg tgg gat cac tgg atc atg gac gtg ctc gtc tgc aac ggg ctg Cys Trp Trp Asp His Trp Ile Met Asp Val Leu Val Cys Asn Gly Leu 245 250 255	1065
ggc atc tac tgc ggc atg aag acc ctt gag tgg ctg tcc ctg aag acg Gly Ile Tyr Cys Gly Met Lys Thr Leu Glu Trp Leu Ser Leu Lys Thr 260 265 270	1113
tac aag tgg cag ggc ctc tgg aac att ccg acc tac aag ggc aag atg Tyr Lys Trp Gln Gly Leu Trp Asn Ile Pro Thr Tyr Lys Gly Lys Met 275 280 285	1161
aag agg atc gcc ttc cag ttc acg ccg tac agc tgg gtt cgc ttc gag Lys Arg Ile Ala Phe Gln Phe Thr Pro Tyr Ser Trp Val Arg Phe Glu 290 295 300	1209
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atg gat gac ccg aag ccc cac aag aag ctg ggc ccg cag gcc tgg ctg Met Asp Asp Pro Lys Pro His Lys Lys Leu Gly Pro Gln Ala Trp Leu 370 375 380	1449
gtg gcg gcc atc acg gcc acg gag ctg ctc atc gtg gtg aag tac gac Val Ala Ala Ile Thr Ala Thr Glu Leu Leu Ile Val Val Lys Tyr Asp 385 390 395 400	1497
ccc cac acg ctc acc ctg tcc ctg ccc ttc tac atc tcc cag tgc tgg Pro His Thr Leu Thr Leu Ser Leu Pro Phe Tyr Ile Ser Gln Cys Trp 405 410 415	1545

acc ctc ggc tcc gtc ctg gcg ctc acc tgg acc gtc tgg cgc ttc ttc Thr Leu Gly Ser Val Leu Ala Leu Thr Trp Thr Val Trp Arg Phe Phe 420 425 430	1593
ctg cgg gac atc aca ttg agg tac aag gag acc cgg tgg cag aag tgg Leu Arg Asp Ile Thr Leu Arg Tyr Lys Glu Thr Arg Trp Gln Lys Trp 435 440 445	1641
cag aac aag gat gac cag ggc agc acc gtc ggc aac ggg gac cag cac Gln Asn Lys Asp Asp Gln Gly Ser Thr Val Gly Asn Gly Asp Gln His 450 455 460	1689
cca ctg ggg ctg gac gaa gac ctg ctg ggg cct ggg gtg gcc gag ggc Pro Leu Gly Leu Asp Glu Asp Leu Leu Gly Pro Gly Val Ala Glu Gly 465 470 475 480	1737
gag gga gca cca act cca aac tga cctggccgt ggctgcctcg tgagcctccc Glu Gly Ala Pro Thr Pro Asn * 485	1791
agagccccagg cctccgtggc ctccctctgt gtgagtccca ccaggagcca cgtccccccc ttgcctcaa gctcgtgtgg gcgctcgcc acaaacactc cgtggctgag aggcagcgga tccaggcagc gatgctgagc cacctctcc gagccttcct ttcacacaga ccaccccgga ggacacgtgg atgatggggt cagagatcac tgagctgcc ctcaggggg cctggAACCC gggtgctggg gtcatgctgc ctccgtggct ccaaggtgag ggtcatcttc acgagcaaag agaaccaata aagtgacaac gaacgtttga ggcttccagc cctccccca aaaaaaaaaa a	1851 1911 1971 2031 2091 2151 2152

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ctc ggg ccc gcc gcc ttg cat ttc gat ctc cgt gat gac gat gac gcg Leu Gly Pro Gly Ala Leu His Phe Asp Leu Arg Asp Asp Asp Asp Ala 20 25 30	152
gaa gaa gaa ggg ccc aag cgg gag ctt ggt gtc cgg cgt ccc ggg ggc Glu Glu Glu Gly Pro Lys Arg Glu Leu Gly Val Arg Arg Pro Gly Gly 35 40 45 50	200

gca ggg aag gag ggc gtc cga gtc aac aac cgc ttc gag ctg ata aac Ala Gly Lys Glu Gly Val Arg Val Asn Asn Arg Phe Glu Leu Ile Asn 55 60 65	248
att gac gat ctt gag gat gac cct gtg gtg aac ggg gag agg tct ggc Ile Asp Asp Leu Glu Asp Asp Pro Val Val Asn Gly Glu Arg Ser Gly 70 75 80	296
tgt gcg ctc aca gac gct gtg gca cca ggg aac aaa gga agg ggt cag Cys Ala Leu Thr Asp Ala Val Ala Pro Gly Asn Lys Gly Arg Gly Gln 85 90 95	344
cgt gga aac aca gag agc aag acg gat gga gat gac acc gag aca gtg Arg Gly Asn Thr Glu Ser Lys Thr Asp Gly Asp Asp Thr Glu Thr Val 100 105 110	392
ccc tca gag cag tct cat gca agt ggc aaa ctc cgg aag aag aaa aaa Pro Ser Glu Gln Ser His Ala Ser Gly Lys Leu Arg Lys Lys Lys Lys 115 120 125 130	440
aaa cag aaa aac aag aaa agc agc acg gga gaa gca tcg gaa aac gga Lys Gln Lys Asn Lys Ser Ser Thr Gly Glu Ala Ser Glu Asn Gly 135 140 145	488
cta gaa gat atc gat cgc atc cta gag agg att gag gac agc act ggg Leu Glu Asp Ile Asp Arg Ile Leu Glu Arg Ile Glu Asp Ser Thr Gly 150 155 160	536
ttg aac cgt ccc ggc cca gct ccc ctg agc tcc agg aag cac gtt ctc Leu Asn Arg Pro Gly Pro Ala Pro Leu Ser Ser Arg Lys His Val Leu 165 170 175	584
tac gtg gag cac aga cac ttg aat cca gac aca gaa ctg aaa agg tat Tyr Val Glu His Arg His Leu Asn Pro Asp Thr Glu Leu Lys Arg Tyr 180 185 190	632
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cgt gtg tac ccc aag tgc aca tgg ctg acc acc cct aaa agc acc tgg Arg Val Tyr Pro Lys Cys Thr Trp Leu Thr Pro Lys Ser Thr Trp. 215 220 225	728
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atc gtg gtt ctg ctc cag acg agc cct tac cac gtt gac tca ctc ctg Ile Val Val Leu Leu Gln Thr Ser Pro Tyr His Val Asp Ser Leu Leu 275 280 285 290	920
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ctg agt ctc gag ccg gat gag gac ccc ctc tgc atg ctg ctg ctc atc Leu Ser Leu Glu Pro Asp Glu Asp Pro Leu Cys Met Leu Leu Ile 375 380 385	1208
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cag ctc cct aat ttt gcc ttc tct gtt cca ctg gcg tat ttc ctg ctg Gln Leu Pro Asn Phe Ala Phe Ser Val Pro Leu Ala Tyr Phe Leu Leu 420 425 430	1352
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aac cgg cgg aag gtg ctc tac cag cgt gca ccc agg aat atc cac cgc Asn Arg Arg Lys Val Leu Tyr Gln Arg Ala Pro Arg Asn Ile His Arg 550 555 560	1736

cat gtg atc ctc tct gag atc aag gaa gcc gtc gct gcc ctg ccc ccg His Val Ile Leu Ser Glu Ile Lys Glu Ala Val Ala Ala Leu Pro Pro 565 570 575	1784
gac gtg acc acg cag tct gtg atg ggg ttt gat cct ctg cct cct tcg Asp Val Thr Thr Gln Ser Val Met Gly Phe Asp Pro Leu Pro Pro Ser 580 585 590	1832
gac aca atc tac tcc tac gtc agg cca gag agg cta agt cct atc agc Asp Thr Ile Tyr Ser Tyr Val Arg Pro Glu Arg Leu Ser Pro Ile Ser 595 600 605 610	1880
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gag ggg gag ggg gag tgg gac tga gcgtccgcag aggtgaccga aaagccgtat Glu Gly Glu Gly Glu Trp Asp * 675 680	2126
gatgatgttc ccgatttctc tgttggtcgg agtcggccag ttgcctgaag taggaaagct	2186
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ctc ggg ccc ggc gcc ttg cat ttc gat ctc cgt gat gac gat gac gcg Leu Gly Pro Gly Ala Leu His Phe Asp Leu Arg Asp Asp Asp Asp Ala 20 25 30	152
gaa gaa gaa ggg ccc aag cgg gag ctt ggt gtc cgg cgt ccc ggg ggc	200

Glu	Glu	Glu	Gly	Pro	Lys	Arg	Glu	Leu	Gly	Val	Arg	Arg	Pro	Gly	Gly	
35				40			45				50					
gca ggg aag gag ggc gtc cga aac aac cgc ttc gag ctg ata aac															248	
Ala Gly Lys Glu Gly Val Arg Val Asn Asn Arg Phe Glu Leu Ile Asn																
55 60 65																
att gac gat ctt gag gat gac cct gtg gtg aac ggg gag agg tct ggc															296	
Ile Asp Asp Leu Glu Asp Asp Pro Val Val Asn Gly Glu Arg Ser Gly																
70 75 80																
tgt gcg ctc aca gac gct gtg gca cca ggg aac aaa gga agg ggt cag															344	
Cys Ala Leu Thr Asp Ala Val Ala Pro Gly Asn Lys Gly Arg Gly Gln																
85 90 95																
cgt gga aac aca gag agc aag acg gat gga gat gac acc gag aca gtg															392	
Arg Gly Asn Thr Glu Ser Lys Thr Asp Gly Asp Asp Thr Glu Thr Val																
100 105 110																
ccc tca gag cag tct cat gca agt ggc aaa ctc cgg aag aag aaa aaa															440	
Pro Ser Glu Gln Ser His Ala Ser Gly Lys Leu Arg Lys Lys Lys Lys																
115 120 125 130																
aaa cag aaa aac aag aaa agc acg gga gaa gca tcg gaa aac gga															488	
Lys Gln Lys Asn Lys Ser Ser Thr Gly Glu Ala Ser Glu Asn Gly																
135 140 145																
cta gaa gat atc gat cgc atc cta gag agg att gag gac agc act ggg															536	
Leu Glu Asp Ile Asp Arg Ile Leu Glu Arg Ile Glu Asp Ser Thr Gly																
150 155 160																
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Tyr Val Glu His Arg His Leu Asn Pro Asp Thr Glu Leu Lys Arg Tyr																
180 185 190																
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Phe Gly Ala Arg Ala Ile Leu Gly Glu Gln Arg Pro Arg Gln Arg Gln																
195 200 205 210																
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Arg Val Tyr Pro Lys Cys Thr Trp Leu Thr Pro Lys Ser Thr Trp																
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230 235 240																
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Lys Gly Leu Ser Phe Phe Ala Phe Glu His Ser Glu Glu Tyr Gln Gln																
245 250 255																
gct cag cac aag ttc ctg gtg gcc gtg gag tct atg gag ccg aac aac															872	
Ala Gln His Lys Phe Leu Val Ala Val Glu Ser Met Glu Pro Asn Asn																
260 265 270																
atc gtg ctc agc gat gcc tgc cgc ttt caa gag gat cag gag atg gct															920	
Ile Val Leu Ser Asp Ala Cys Arg Phe Gln Glu Asp Gln Glu Met Ala																
275 280 285 290																
cga gac ctc gta gag aga gcg ctg tac agc atg gaa tgt gcg ttc cac															968	

Arg Asp Leu Val Glu Arg Ala Leu Tyr Ser Met Glu Cys Ala Phe His			
295	300	305	
ccc ctg ttc agt ctc acc agt ggg gcc tgc cgg ctg gat tac cgc aga		1016	
Pro Leu Phe Ser Leu Thr Ser Gly Ala Cys Arg Leu Asp Tyr Arg Arg			
310	315	320	
ccc gag aac agg agc ttc tac ctg gcc ctc tac aag cag atg agc ttc		1064	
Pro Glu Asn Arg Ser Phe Tyr Leu Ala Leu Tyr Lys Gln Met Ser Phe			
325	330	335	
ctg gag aag cga ggc tgc ccg cgc acg gcg ctg gag tac tgc aag ctc		1112	
Leu Glu Lys Arg Gly Cys Pro Arg Thr Ala Leu Glu Tyr Cys Lys Leu			
340	345	350	
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Ile Leu Ser Leu Glu Pro Asp Glu Asp Pro Leu Cys Met Leu Leu Leu			
355	360	365	370
atc gac cac ctg gcc ttg cgg gcc cgg aac tac gag tac ctg atc cgc		1208	
Ile Asp His Leu Ala Leu Arg Ala Arg Asn Tyr Glu Tyr Leu Ile Arg			
375	380	385	
ctc ttc cag gag tgg gag gtg ggt gcg agc ctg gct cat cgg aac ctg		1256	
Leu Phe Gln Glu Trp Glu Val Gly Ala Ser Leu Ala His Arg Asn Leu			
390	395	400	
tcc cag ctc cct aat ttt gcc ttc tct gtt cca ctg gcg tat ttc ctg		1304	
Ser Gln Leu Pro Asn Phe Ala Phe Ser Val Pro Leu Ala Tyr Phe Leu			
405	410	415	
ctg agc cag cag aca gac ctc cct gag tgt gag cag agc tct gcc agg		1352	
Leu Ser Gln Gln Thr Asp Leu Pro Glu Cys Glu Gln Ser Ser Ala Arg			
420	425	430	
cag aag gcc tct ctc ctg ata cag cag gcg ctc acc atg ttc cct gga		1400	
Gln Lys Ala Ser Leu Leu Ile Gln Gln Ala Leu Thr Met Phe Pro Gly			
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gtc ctc ctg ccc ctg ctc gag tct tgc agt gtg cgg ccc gac gcc agc		1448	
Val Leu Leu Pro Leu Leu Glu Ser Cys Ser Val Arg Pro Asp Ala Ser			
455	460	465	
gtt tcc agt cac cgc ttc ttt gga ccc aat gct gaa ata agc cag ccc		1496	
Val Ser Ser His Arg Phe Phe Gly Pro Asn Ala Glu Ile Ser Gln Pro			
470	475	480	
cct gcc ctg agc cag ctg gtg aac ctg tac ctt ggg agg tca cac ttt		1544	
Pro Ala Leu Ser Gln Leu Val Asn Leu Tyr Leu Gly Arg Ser His Phe			
485	490	495	
ctc tgg aaa gag ccc gcc acc atg agc tgg ctg gag gag aac gtc cac		1592	
Leu Trp Lys Glu Pro Ala Thr Met Ser Trp Leu Glu Glu Asn Val His			
500	505	510	
gag gtt ctg caa gca gtg gac gcc ggg gac cca gcc gtg gaa gcc tgt		1640	
Glu Val Leu Gln Ala Val Asp Ala Gly Asp Pro Ala Val Glu Ala Cys			
515	520	525	530
gag aac cgg cgg aag gtg ctc tac cag cgt gca ccc agg aat atc cac		1688	
Glu Asn Arg Arg Lys Val Leu Tyr Gln Arg Ala Pro Arg Asn Ile His			
535	540	545	
cgc cat gtg atc ctc tct gag atc aag gaa gcc gtc gct gcc ctg ccc		1736	

Arg His Val Ile Leu Ser Glu Ile Lys Glu Ala Val Ala Ala Leu Pro			
550	555	560	
ccg gac gtg acc acg cag tct gtg atg ggg ttt gat cct ctg cct cct		1784	
Pro Asp Val Thr Thr Gln Ser Val Met Gly Phe Asp Pro Leu Pro Pro			
565	570	575	
tcg gac aca atc tac tcc tac gtc agg cca gag agg cta agt cct atc		1832	
Ser Asp Thr Ile Tyr Ser Tyr Val Arg Pro Glu Arg Leu Ser Pro Ile			
580	585	590	
agc cat gga aac acc att gct ctc ttc cgg tca ctg ttg cca aac		1880	
Ser His Gly Asn Thr Ile Ala Leu Phe Phe Arg Ser Leu Leu Pro Asn			
595	600	605	610
tat acc atg gag ggg gag agg ccc gag gaa gga gtg gct ggg ggt ctg		1928	
Tyr Thr Met Glu Gly Glu Arg Pro Glu Glu Gly Val Ala Gly Gly Leu			
615	620	625	
aac cgc aac cag ggc ctg aac agg ctg atg ctg gct gtg cgc gac atg		1976	
Asn Arg Asn Gln Gly Leu Asn Arg Leu Met Leu Ala Val Arg Asp Met			
630	635	640	
atg gcc aac ttc cac ctc aac gac ctg gag gcg ccg cac gag gac gac		2024	
Met Ala Asn Phe His Leu Asn Asp Leu Glu Ala Pro His Glu Asp Asp			
645	650	655	
gct gag ggg gag ggg gag tgg gac tga gcgtc cgcagagggtg accgaaaagc		2076	
Ala Glu Gly Glu Gly Glu Trp Asp *			
660	665		
cgtatgatga tgttcccgat ttctctgttg gtcggagtgc gccagttgcc tgaagtaggg		2136	
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505

510

515

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ggtgtgtctg gaagcgcgtg aggccggag ctcgagagag ctaacagact agccggctgg	180
acatctggac cgctggatcc ggaggtggcg accccggcct gacccggacc ctaaatccgt	240
cccccggccca gagggcggag ggcgcgcgtc gattcccccac acgcggcggc gcccgcgttt	300
tacgtctgcacatctccagg ggagccacc acccttagtca ac atg gcc tcg gaa	354
Met Ala Ser Glu	
1	

gac att gcc aag ctg gca gag aca ctt gcc aag act cag gtg gcc ggg	402
Asp Ile Ala Lys Leu Ala Glu Thr Leu Ala Lys Thr Gln Val Ala Gly	
5 10 15 20	

gga cag ctg agt ttc aaa ggc aag agc ctc aaa ctc aac act gca gaa	450
Gly Gln Leu Ser Phe Lys Gly Lys Ser Leu Lys Leu Asn Thr Ala Glu	
25 30 35	

gat gct aaa gat gtg att aaa gag att gaa gac ttt gac agc ttg gag Asp Ala Lys Asp Val Ile Lys Glu Ile Glu Asp Phe Asp Ser Leu Glu 40 45 50	498
gct ctg cgt ctg gaa ggc aac aca gtg ggc gtg gaa gca gcc agg gtc Ala Leu Arg Leu Glu Gly Asn Thr Val Gly Val Glu Ala Ala Arg Val 55 60 65	546
atc gcc aag gcc tta gag aag aag tcg gag ttg aag cgc tgc cac tgg Ile Ala Lys Ala Leu Glu Lys Ser Glu Leu Lys Arg Cys His Trp 70 75 80	594
agt gac atg ttc acg gga agg ctg cgg acc gag atc cca cca gcc ctg Ser Asp Met Phe Thr Gly Arg Leu Arg Thr Glu Ile Pro Pro Ala Leu 85 90 95 100	642
atc tca cta ggg gaa gga ctc atc aca gct ggg gct cag ctg gtg gag Ile Ser Leu Gly Glu Gly Leu Ile Thr Ala Gly Ala Gln Leu Val Glu 105 110 115	690
ctg gac tta agc gac aac gca ttc ggg ccc gac ggt gtg caa ggc ttc Leu Asp Leu Ser Asp Asn Ala Phe Gly Pro Asp Gly Val Gln Gly Phe 120 125 130	738
gag gcc ctg ctc aag agc tca gcc tgc ttc acc ctg cag gaa ctc aag Glu Ala Leu Leu Lys Ser Ser Ala Cys Phe Thr Leu Gln Glu Leu Lys 135 140 145	786
ctc aac aac tgt ggc atg ggc att ggc ggc aag atc ctg gct gca Leu Asn Asn Cys Gly Met Gly Ile Gly Gly Lys Ile Leu Ala Ala 150 155 160	834
gct ctg acc gaa tgt cac cgg aaa tcc agt gcc caa ggc aag cct ctg Ala Leu Thr Glu Cys His Arg Lys Ser Ser Ala Gln Gly Lys Pro Leu 165 170 175 180	882
gcc ctg aag gtc ttt gtg gct ggc aga aac cgt ctg gag aat gat ggc Ala Leu Lys Val Phe Val Ala Gly Arg Asn Arg Leu Glu Asn Asp Gly 185 190 195	930
gcc act gcc ttg gca gaa gct ttt agg gtc atc ggg acc ctg gag gag Ala Thr Ala Leu Ala Glu Ala Phe Arg Val Ile Gly Thr Leu Glu Glu 200 205 210	978
gtc cac atg cca cag aat ggg atc aac cac cct ggc atc act gcc ctg Val His Met Pro Gln Asn Gly Ile Asn His Pro Gly Ile Thr Ala Leu 215 220 225	1026
gcc cag gct ttc gtc aac ccc ctg ctg cgg gtc atc aac ctg aat Ala Gln Ala Phe Ala Val Asn Pro Leu Leu Arg Val Ile Asn Leu Asn 230 235 240	1074
gac aac acc ttc act gag aag ggc gcc gtg gcc atg gcc gag acc ttg Asp Asn Thr Phe Thr Glu Lys Gly Ala Val Ala Met Ala Glu Thr Leu 245 250 255 260	1122
aag acc ttg cgg cag gtg gag gtg att aat ttt ggg gac tgc ctg gtg Lys Thr Leu Arg Gln Val Glu Val Ile Asn Phe Gly Asp Cys Leu Val 265 270 275	1170
cgc tcc aag ggt gca gtt gcc att gca gat gcc atc cgc ggc ggc ctg Arg Ser Lys Gly Ala Val Ala Ile Ala Asp Ala Ile Arg Gly Gly Leu 280 285 290	1218

ccc aag cta aag gag ctg aac ttg tca ttc tgt gaa atc aag agg gat Pro Lys Leu Lys Glu Leu Asn Leu Ser Phe Cys Glu Ile Lys Arg Asp 295 300 305	1266
gct gcc ctg gct gtt gag gcc atg gca gac aaa gct gag ctg gag Ala Ala Leu Ala Val Ala Glu Ala Met Ala Asp Lys Ala Glu Leu Glu 310 315 320	1314
aag ctg gac ctg aat ggc aac acc ctg gga gaa gaa ggc tgt gaa cag Lys Leu Asp Leu Asn Gly Asn Thr Leu Gly Glu Glu Gly Cys Glu Gln 325 330 335 340	1362
ctt cag gag gtg ctg gag ggc ttc aac atg gcc aag gtg ctg gcg tcc Leu Gln Glu Val Leu Glu Gly Phe Asn Met Ala Lys Val Leu Ala Ser 345 350 355	1410
ctc agt gat gac gag gac gag gag gag gaa gaa gag cct cag Leu Ser Asp Asp Glu Asp Glu Glu Glu Glu Glu Pro Gln 360 365 370	1458
cag cga ggg cag gga gag aag tca gcc acg ccc tca cgg aag att ctg Gln Arg Gly Gln Gly Glu Lys Ser Ala Thr Pro Ser Arg Lys Ile Leu 375 380 385	1506
gac cct aac act ggg gag cca gct ccc gtg ctg tcc tcc cca cct cct Asp Pro Asn Thr Gly Glu Pro Ala Pro Val Leu Ser Ser Pro Pro Pro 390 395 400	1554
gca gac gtc tcc acc ttc ctg gct ttt ccc tct cca gag aag ctg ctg Ala Asp Val Ser Thr Phe Leu Ala Phe Pro Ser Pro Glu Lys Leu Leu 405 410 415 420	1602
cgc cta ggg ccc aag agc tcc gtg ctg ata gcc cag cag act gac acg Arg Leu Gly Pro Lys Ser Ser Val Leu Ile Ala Gln Gln Thr Asp Thr 425 430 435	1650
tct gac ccc gag aag gtg gtc tct gcc ttc cta aag gtg tca tct gtg Ser Asp Pro Glu Lys Val Val Ser Ala Phe Leu Lys Val Ser Ser Val 440 445 450	1698
ttc aag gac gaa gct act gtg agg atg gca gtg cag gat gca gta gat Phe Lys Asp Glu Ala Thr Val Arg Met Ala Val Gln Asp Ala Val Asp 455 460 465	1746
gcc ctg atg cag aag gct ttc aac tcc tcg tcc ttc aac tcc aac acc Ala Leu Met Gln Lys Ala Phe Asn Ser Ser Phe Asn Ser Asn Thr 470 475 480	1794
ttc ctc acc agg ctc ctc gtg cac atg ggt ctg ctc aag agt gaa gac Phe Leu Thr Arg Leu Leu Val His Met Gly Leu Leu Lys Ser Glu Asp 485 490 495 500	1842
aag gtc aag gcc att gcc aac ctg tac ggc ccc ctg atg gcg ctg aac Lys Val Lys Ala Ile Ala Asn Leu Tyr Gly Pro Leu Met Ala Leu Asn 505 510 515	1890
cac atg gtg cag cag gac tat ttc ccc aag gcc ctt gca ccc ctg ctg His Met Val Gln Gln Asp Tyr Phe Pro Lys Ala Leu Ala Pro Leu Leu 520 525 530	1938
ctg gcg ttc gtg acc aag ccc aac agc gcc ctg gaa tcc tgc tcc ttc Leu Ala Phe Val Thr Lys Pro Asn Ser Ala Leu Glu Ser Cys Ser Phe 535 540 545	1986

gcc cgc cac agt ctg ctg cag acg ctg tac aag gtc tag actcaaagcc Ala Arg His Ser Leu Leu Gln Thr Leu Tyr Lys Val *	2035
550 555 560	
 tctccatcc cttggcctgg accagtgagc tggggaggga ctcggatgaa ctgaggcgca gcctacgcca ttgccttgg a caggactctg gccacaggca gggcgggtct gtgtcccatg tgtcctgtca gtccccctgag tatgtgtgtg ggtgtggcgc atgtcaggt ctgtgcctcc tgtcgggatt tgggttttaa cgtcttctgc tggcccagcc ctgctctgtt gtggggagtt ggccccccagg ggaaagggt gtgagctgct ccgcattaa actcacctcc acctgaggc gtctgctga tctccgcctg ggccctgatg gccgtccca cccacactgcc ttccggcccg gtccctggc ggagccagaa cccaaaggagt tgcccgctg ctgtccttcc cctctgtgtt gtgattgggt ttttcctgc cctgcctggg gctgcttctc gtcaccaagc cctggctctg cgccagctgt cacccttacc atccatacca ctgtgctgac cgctcagcct gaagagcaga gaatgccatg ggtgggactg tgggggtcgg atcgtgggt ttttggcaga gggcaaccct gggccccaca ccgtgtggac aggacacac cagattgtcc aggagcagga gctgctggg ctgcgctggc cccggaccta gtgggccttc tcctggctgc tgagatgtcg tctgtgactg gcctggctgg agggggagtg ttgacaaccc aaagctgttc tccagtcgg ggagggagag gcaggggtccc caatgtccga gctgcacactg gacgctgctc taaaaggacc tcctgggca ggggagcggt agggctgga ctggcagat gctgtatgac ctccctgagc acccgtgact gccccatgt ttcccttttgc tgctctgtgt gtgtctggc ttttgggggg ggcttcacaa ataaaagtctgt gtggcagtt caaaaaaaaaaaa aaa	2095 2155 2215 2275 2335 2395 2455 2515 2575 2635 2695 2755 2815 2875 2935 2995 3028

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<212> DNA  
<213> Homo sapiens

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---	-------------------------

gcc cag atg gac tac tat ggc acc cgc ctg gca acc tgc tca tca gac Ala Gln Met Asp Tyr Tyr Gly Thr Arg Leu Ala Thr Cys Ser Ser Asp	282
--	-----

5	10	15	20	
agg tcc gtc aaa atc ttt gat gtg cgc aat gga ggg cag atc ctt atc Arg Ser Val Lys Ile Phe Asp Val Arg Asn Gly Gly Gln Ile Leu Ile 25		30	35	330
gcc gac ctc agg ggt cat gag ggt cct gtg tgg caa gtg gcc tgg gct Ala Asp Leu Arg Gly His Glu Gly Pro Val Trp Gln Val Ala Trp Ala 40	45		50	378
cac ccc atg tac ggc aac atc ctg gca tcg tgc tcc tat gac cgg aaa His Pro Met Tyr Gly Asn Ile Leu Ala Ser Cys Ser Tyr Asp Arg Lys 55	60	65		426
gtc att atc tgg aga gag gaa aac ggc acc tgg gag aag agc cac gag Val Ile Ile Trp Arg Glu Glu Asn Gly Thr Trp Glu Lys Ser His Glu 70	75	80		474
cat gcg gga cac gac tcc tca gtg aac tcg gtg tgc tgg gcc ccc cat His Ala Gly His Asp Ser Ser Val Asn Ser Val Cys Trp Ala Pro His 85	90	95	100	522
gac tac ggc ctg atc ctg gcc tgt ggg agc tcg gat ggg gcc atc tcc Asp Tyr Gly Leu Ile Leu Ala Cys Gly Ser Ser Asp Gly Ala Ile Ser 105	110	115		570
ctg ctg act tac acc ggg gaa ggc caa tgg gaa gta aag aag atc aac Leu Leu Thr Tyr Thr Gly Glu Gly Gln Trp Glu Val Lys Lys Ile Asn 120	125	130		618
aac gct cac acc att ggc tgc aat gcc gtc agc tgg gcc cct gct gtt Asn Ala His Thr Ile Gly Cys Asn Ala Val Ser Trp Ala Pro Ala Val 135	140	145		666
gta cct gga agc ctc ata gac cac cca tcg ggg cag aaa ccc aat tac Val Pro Gly Ser Leu Ile Asp His Pro Ser Gly Gln Lys Pro Asn Tyr 150	155	160		714
atc aag agg ttt gca tca ggt ggc tgt gac aac ctc atc aag ctg tgg Ile Lys Arg Phe Ala Ser Gly Gly Cys Asp Asn Leu Ile Lys Leu Trp 165	170	175	180	762
aag gag gag gag gac ggc cag tgg aag gag gag cag aag cta gaa gcg Lys Glu Glu Glu Asp Gly Gln Trp Lys Glu Glu Gln Lys Leu Glu Ala 185	190	195		810
cac agt gac tgg gtt cga gat gtg gcc tgg gcc ccc tcc atc ggc ctg His Ser Asp Trp Val Arg Asp Val Ala Trp Ala Pro Ser Ile Gly Leu 200	205	210		858
ccc acc agc acc atc gcc agc tgc tcc cag gat ggt cgt gtg ttc att Pro Thr Ser Thr Ile Ala Ser Cys Ser Gln Asp Gly Arg Val Phe Ile 215	220	225		906
tgg acc tgt gat gat gcc tca agc aat acg tgg tcc cct aaa ttg ttg Trp Thr Cys Asp Asp Ala Ser Ser Asn Thr Trp Ser Pro Lys Leu Leu 230	235	240		954
cac aag ttc aac gat gtg gtg tgg cat gtg agc tgg tcc atc aca gcc His Lys Phe Asn Asp Val Val Trp His Val Ser Trp Ser Ile Thr Ala 245	250	255	260	1002
aac atc ctg gct gtc tct ggt gga gac aat aag gtg acc ctg tgg aag Asn Ile Leu Ala Val Ser Gly Gly Asp Asn Lys Val Thr Leu Trp Lys				1050

265

270

275

gag tca gtt gat ggg cag tgg gtg tgc atc agt gat gtc aac aag ggc Glu Ser Val Asp Gly Gln Trp Val Cys Ile Ser Asp Val Asn Lys Gly 280 285 290	1098
cag ggc tcc gta tca gca tca gtg aca gag ggc cag cag aac gag cag Gln Gly Ser Val Ser Ala Ser Val Thr Glu Gly Gln Gln Asn Glu Gln 295 300 305	1146
tgacaagaca ggtggggcct ggctccccac ccgcaggctc caggactgcc cttctggg ccaactaacc aaacaactgg gaagagcccc caactccaac aggattattt tcccaggagg agttacagat gcagccacag attgatcatc tgccctaacg tgatcgaga tgctttgtaa tctactgtcc agctgaaagc actcatgtta cgaggaagaa actacaagtg atgttcaaat ctatttggg tcattttat gtaccttgg gttcaggcat tatttggggg gttttgttcc caaaggaact aaataaagtc atattgcttaaaaaaaaaaaa aaa	1206 1266 1326 1386 1446 1489

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<212> DNA  
<213> Homo sapiens

<220>  
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aca gca tca agg tct cac aca aca ctc cag gga ggc agc tgc tgc cca Thr Ala Ser Arg Ser His Thr Thr Leu Gln Gly Ser Cys Cys Pro 15 20 25	218
gtg ctg tgg aca gca aag ctt cgg tgc agg aaa tta aga ttc ccc ctg Val Leu Trp Thr Ala Lys Leu Arg Cys Arg Lys Leu Arg Phe Pro Leu 30 35 40	266
cct ccc cct ccc cca tcc tca tca gct tgg cca tgg cag ggc tgg ggg Pro Pro Pro Pro Pro Ser Ser Ala Trp Pro Trp Gln Gly Trp Gly 45 50 55 60	314
atc aga ggt gaa cag gaa gca gaa gga ccc ctg ggg gag aca ggg cct Ile Arg Gly Glu Gln Glu Ala Glu Gly Pro Leu Gly Glu Thr Gly Pro 65 70 75	362
cca gtg gga cca gag ctg agt ggc ctc agg cag tgg cgg aag ctg att Pro Val Gly Pro Glu Leu Ser Gly Leu Arg Gln Trp Arg Lys Leu Ile 80 85 90	410
aaa gga agg tac ggg gag tgg agg gga agt gga caa aag aca gga cag	458

Lys Gly Arg Tyr Gly Glu Trp Arg Gly Ser Gly Gln Lys Thr Gly Gln  
95 100 105

cca tct tag acaacaa tgcaaggggg agaaaactgaa gaaaacagaa cagagaccac 514  
Pro Ser \*  
110

tactggcaat aaacagagag aaagtgaagc cccatgggtg aggcacacacct acattactta 574  
agaaaacgtga gcacattctt acgcctaggg caataaaatac atccttgagc tacacaggct 634  
aaqcaagaqgt qaaattacaq cac 657

<210> 610  
<211> 2078  
<212> DNA  
<213> *Homo sapiens*

<220>  
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<222> (199) . . (1836)

cag aac aca aag cgt gaa tcc gga aga aaa gtt caa tct gga aac atc 279  
Gln Asn Thr Lys Arg Glu Ser Gly Arg Lys Val Gln Ser Gly Asn Ile  
15 20 25

aat gct gcc aag act att gca gat atc atc cga aca tgt ttg gga ccc 327  
Asn Ala Ala Lys Thr Ile Ala Asp Ile Ile Arg Thr Cys Leu Gly Pro  
30 35 40

aag tcc atg atg aag atg ctt ttg gac cca atg gga ggc att gtg atg 375  
Lys Ser Met Met Lys Met Leu Leu Asp Pro Met Gly Gly Ile Val Met  
45 50 55

acc aat gat ggc aat gcc att ctt cga gag att caa gtc cag cat cca 423  
 Thr Asn Asp Gly Asn Ala Ile Leu Arg Glu Ile Gln Val Gln His Pro  
   60           65           70           75

gcg gcc aag tcc atg atc gaa att agc cgg acc cag gat gaa gag gtt      471  
 Ala Ala Lys Ser Met Ile Glu Ile Ser Arg Thr Gln Asp Glu Glu Val  
                   80                85                90

gga gat ggg acc aca tca gta att att ctt gca ggg gaa atg ctg tct 519  
Gly Asp Gly Thr Thr Ser Val Ile Ile Leu Ala Gly Glu Met Leu Ser  
95 100 105

gta gct gag cac ttc ctg gag cag cag atg cac cca aca gtg gtg atc 567  
Val Ala Glu His Phe Leu Glu Gln Gln Met His Pro Thr Val Val Ile  
110 115 120

agt gct tac cgc aag gca ttg gat gat atg atc agc acc cta aag aaa Ser Ala Tyr Arg Lys Ala Leu Asp Asp Met Ile Ser Thr Leu Lys Lys 125 130 135	615
ata agt atc cca gtc gac atc agt gac agt gat atg atg ctg aac atc Ile Ser Ile Pro Val Asp Ile Ser Asp Ser Asp Met Met Leu Asn Ile 140 145 150 155	663
atc aac agc tct att act acc aaa gcc atc agt cgg tgg tca tct ttg Ile Asn Ser Ser Ile Thr Thr Lys Ala Ile Ser Arg Trp Ser Ser Leu 160 165 170	711
gct tgc aac att gcc ctg gat gct gtc aag atg gta cag ttt gag gag Ala Cys Asn Ile Ala Leu Asp Ala Val Lys Met Val Gln Phe Glu Glu 175 180 185	759
aat ggt cgg aaa gag att gac ata aaa aaa tat gca aga gtg gaa aag Asn Gly Arg Lys Glu Ile Asp Ile Lys Lys Tyr Ala Arg Val Glu Lys 190 195 200	807
ata cct gga ggc atc att gaa gac tcc tgt gtc ttg cgt gga gtc atg Ile Pro Gly Gly Ile Ile Glu Asp Ser Cys Val Leu Arg Gly Val Met 205 210 215	855
att aac aag gat gtg acc cat cca cgt atg cgg cgc tat atc aag aac Ile Asn Lys Asp Val Thr His Pro Arg Met Arg Arg Tyr Ile Lys Asn 220 225 230 235	903
cct cgc att gtg ctg ctg gat tct tct ctg gaa tac aag aaa gga gaa Pro Arg Ile Val Leu Leu Asp Ser Ser Leu Glu Tyr Lys Lys Gly Glu 240 245 250	951
agc cag act gac att gag att aca cga gag gag gac ttc acc cga att Ser Gln Thr Asp Ile Glu Ile Thr Arg Glu Glu Asp Phe Thr Arg Ile 255 260 265	999
ctc cag atg gag gaa gag tac atc cag cag ctc tgt gag gac att atc Leu Gln Met Glu Glu Tyr Ile Gln Gln Leu Cys Glu Asp Ile Ile 270 275 280	1047
caa ctg aag ccc gat gtg gtc atc act gaa aag ggc atc tca gat tta Gln Leu Lys Pro Asp Val Val Ile Thr Glu Lys Gly Ile Ser Asp Leu 285 290 295	1095
gct cag cac tac ctt atg cgg gcc aat atc aca gcc atc cgc aga gtc Ala Gln His Tyr Leu Met Arg Ala Asn Ile Thr Ala Ile Arg Arg Val 300 305 310 315	1143
cgg aag aca gac aat aat cgc att gct aga gcc tgt ggg gcc cgg ata Arg Lys Thr Asp Asn Asn Arg Ile Ala Arg Ala Cys Gly Ala Arg Ile 320 325 330	1191
gtc agc cga cca gag gaa ctg aga gaa gat gat gtt gga aca gga gca Val Ser Arg Pro Glu Glu Leu Arg Glu Asp Asp Val Gly Thr Gly Ala 335 340 345	1239
ggc ctg ttg gaa atc aag aaa att gga gat gaa tac ttt act ttc atc Gly Leu Leu Glu Ile Lys Ile Gly Asp Glu Tyr Phe Thr Phe Ile 350 355 360	1287
act gac tgc aaa gac ccc aag gcc tgc acc att ctc ctc cgg ggg gct Thr Asp Cys Lys Asp Pro Lys Ala Cys Thr Ile Leu Arg Gly Ala 365 370 375	1335

agc aaa gag att ctc tcg gaa gta gaa cgc aac ctc cag gat gcc atg Ser Lys Glu Ile Leu Ser Glu Val Glu Arg Asn Leu Gln Asp Ala Met 380 385 390 395	1383
caa gtg tgt cgc aat gtt ctc ctg gac cct cag ctg gtg cca ggg ggt Gln Val Cys Arg Asn Val Leu Leu Asp Pro Gln Leu Val Pro Gly Gly 400 405 410	1431
ggg gcc tcc gag atg gct gtg gcc cat gcc ttg aca gaa aaa tcc aag Gly Ala Ser Glu Met Ala Val Ala His Ala Leu Thr Glu Lys Ser Lys 415 420 425	1479
gcc atg act ggt gtg gaa caa tgg cca tac agg gct gtt gcc cag gcc Ala Met Thr Gly Val Glu Gln Trp Pro Tyr Arg Ala Val Ala Gln Ala 430 435 440	1527
cta gag gtc att cct cgt acc ctg atc cag aac tgt ggg gcc agc acc Leu Glu Val Ile Pro Arg Thr Leu Ile Gln Asn Cys Gly Ala Ser Thr 445 450 455	1575
atc cgt cta ctt acc tcc ctt cgg gcc aag cac acc cag gag aac tgt Ile Arg Leu Leu Thr Ser Leu Arg Ala Lys His Thr Gln Glu Asn Cys 460 465 470 475	1623
gag acc tgg ggt gta aat ggt gag acg ggt act ttg gtg gac atg aag Glu Thr Trp Gly Val Asn Gly Glu Thr Gly Thr Leu Val Asp Met Lys 480 485 490	1671
gaa ctg ggc ata tgg gag cca ttg gct gtg aag ctg cag act tat aag Glu Leu Gly Ile Trp Glu Pro Leu Ala Val Lys Leu Gln Thr Tyr Lys 495 500 505	1719
aca gca gtg gag acg gca gtt ctg cta ctg cga att gat gac atc gtt Thr Ala Val Glu Thr Ala Val Leu Leu Leu Arg Ile Asp Asp Ile Val 510 515 520	1767
tca ggc cac aaa aag aaa ggc gat gac cag agc cgg caa ggc ggg gct Ser Gly His Lys Lys Gly Asp Asp Gln Ser Arg Gln Gly Gly Ala 525 530 535	1815
cct gat gct ggc cag gag tga gt gctaggcaag gctacttcaa tgcacagaac Pro Asp Ala Gly Gln Glu *540 545	1868
cagcagagtc tcccctttc ctgagccaga gtgccaggaa cactgtggac gtcttttttc	1928
agaagggatc aggttgggg gcagcccca gtccctttct gtcccagctc agttttccaa	1988
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ttaaatttaa gtcatttcaa aaaaaaaaaa	2078

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<212> DNA  
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<220>  
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<222> (188)..(1108)

<400> 611

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gacgcctaac cccgcgagaa ccctgcaaata ttcttcctc ataattggga gaagactcac	180
tggccga atg gca gca gta gat gac ttg caa ttt gaa gaa ttt ggc aat	229
Met Ala Ala Val Asp Asp Leu Gln Phe Glu Glu Phe Gly Asn	
1 5 10	
gca gcc act tct ctg aca gca aac cca gat gcc acc aca gta aac att	277
Ala Ala Thr Ser Leu Thr Ala Asn Pro Asp Ala Thr Thr Val Asn Ile	
15 20 25 30	
gag gat cct ggt gaa acc cca aaa cat cag cca gga tcc cca aga ggc	325
Glu Asp Pro Gly Glu Thr Pro Lys His Gln Pro Gly Ser Pro Arg Gly	
35 40 45	
tca gga aga gaa gaa gat gat gag tta ctg gga aat gat gac tct gac	373
Ser Gly Arg Glu Glu Asp Asp Glu Leu Leu Gly Asn Asp Asp Ser Asp	
50 55 60	
aaa act gag tta ctt gct gga cag aag aaa agc tcc ccc ttc tgg aca	421
Lys Thr Glu Leu Leu Ala Gly Gln Lys Ser Ser Pro Phe Trp Thr	
65 70 75	
ttt gaa tac tac caa aca ttc ttt gat gtg gac acc tac cag gtc ttt	469
Phe Glu Tyr Tyr Gln Thr Phe Phe Asp Val Asp Thr Tyr Gln Val Phe	
80 85 90	
gac aga att aaa gga tct ctt ttg cca ata ccc ggg aaa aac ttt gtg	517
Asp Arg Ile Lys Gly Ser Leu Leu Pro Ile Pro Gly Lys Asn Phe Val	
95 100 105 110	
agg tta tat atc cgc agc aat cca gat ctc tat ggc ccc ttt tgg ata	565
Arg Leu Tyr Ile Arg Ser Asn Pro Asp Leu Tyr Gly Pro Phe Trp Ile	
115 120 125	
tgt gcc acg ttg gtc ttt gcc ata gca att agt ggg aat ctt tcc aac	613
Cys Ala Thr Leu Val Phe Ala Ile Ala Ile Ser Gly Asn Leu Ser Asn	
130 135 140	
ttc ttg atc cat ctg gga gag aag acg tac cat tat gtg ccc gaa ttc	661
Phe Leu Ile His Leu Gly Glu Lys Thr Tyr His Tyr Val Pro Glu Phe	
145 150 155	
cga aaa gtg tcc ata gca gct acc atc atc tat gcc tat gcc tgg ctg	709
Arg Lys Val Ser Ile Ala Ala Thr Ile Ile Tyr Ala Tyr Ala Trp Leu	
160 165 170	
gtt cct ctt gca ctc tgg ggt ttc ctc atg tgg aga aac agc aaa gtt	757
Val Pro Leu Ala Leu Trp Gly Phe Leu Met Trp Arg Asn Ser Lys Val	
175 180 185 190	
atg aac atc gtc tcc tat tca ttt ctg gag att gtg tgt gtc tat gga	805
Met Asn Ile Val Ser Tyr Ser Phe Leu Glu Ile Val Cys Val Tyr Gly	
195 200 205	
tat tcc ctc ttc att tat atc ccc acc gca ata ctg tgg att atc ccc	853
Tyr Ser Leu Phe Ile Tyr Ile Pro Thr Ala Ile Leu Trp Ile Ile Pro	
210 215 220	
cag aaa gct gtt cgt tgg att cta gtc atg att gcc ctg ggc atc tca	901

Gln Lys Ala Val Arg Trp Ile Leu Val Met Ile Ala Leu Gly Ile Ser			
225	230	235	
gga tct ctc ttg gca atg aca ttt tgg cca gct gtt cgt gag gat aac		949	
Gly Ser Leu Leu Ala Met Thr Phe Trp Pro Ala Val Arg Glu Asp Asn			
240	245	250	
cga cgc gtt gca ttg gcc aca att gtg aca att gtg ttg ctc cat atg		997	
Arg Arg Val Ala Leu Ala Thr Ile Val Thr Ile Val Leu Leu His Met			
255	260	265	270
ctg ctt tct gtg ggc tgc ttg gca tac ttt ttt gat gca cca gag atg		1045	
Leu Leu Ser Val Gly Cys Leu Ala Tyr Phe Phe Asp Ala Pro Glu Met			
275	280	285	
gac cat ctc cca aca act aca gct act cca aac caa aca gtt gct gca		1093	
Asp His Leu Pro Thr Thr Ala Thr Pro Asn Gln Thr Val Ala Ala			
290	295	300	
gcc aag tcc agc taa tgaggaaaga ctcacttgag ataccctctc cttgctgaag		1148	
Ala Lys Ser Ser *			
305			
tttttcttga cttctccagt tctctttgt tttttggagc atggttcttt gggaaagtggc		1208	
atccactgca ggaaagcaga atgagcagag ccagcagaac tcatggatgt gcacaaaattc		1268	
ccagtgctg gatggtgcca cactggcgcc taatcacccg ttaacaagc agaaaattaaa		1328	
tgttgcttag cacatgtgtc ttccagctct tcctttcac ccatggatgt tcattgcgag		1388	
catgcgctga ttggactgaa atgcggggg ataggttagg catgctcagt gccgtccctt		1448	
tgcaccaca gtcaaattgac atgcctcaact gtggtagctt aatacctgaa atagaaccat		1508	
ggaaaattct gatgtcctct ctctgaatta tgtacagact acctggggg tcctttctc		1568	
tccaaatgtt agccatcctg aagtagccga acagtagaaa ctttgggg gattaaccgg		1628	
gagcttggaaa atttgtcttt ggtaacctga tactggacag ctgaactgaa tggctgaaaa		1688	
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<222> (86)...(331)

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ctgcctgggc atcctgcgca cggcc atg acg gcg cac tca ttc gcc ctc ccg		112
Met Thr Ala His Ser Phe Ala Leu Pro		
1	5	
gtc atc atc ttc acc acg ttc tgg ggc ctc gtc ggc atc gcc ggg ccc		160
Val Ile Ile Phe Thr Phe Trp Gly Leu Val Gly Ile Ala Gly Pro		

10	15	20	25	
tgg ttc gtg ccg aag gga ccc aac cgc gga gtg atc atc acc atg ctg Trp Phe Val Pro Lys Gly Pro Asn Arg Gly Val Ile Ile Thr Met Leu	30	35	40	208
gtc gcc acc gcc gtc tgc tgt tac ctc ttc tgg ctc atc gcc atc ctg Val Ala Thr Ala Val Cys Cys Tyr Leu Phe Trp Leu Ile Ala Ile Leu	45	50	55	256
gcg cag ctg aac ccc ctg ttc ggg ccc cag ctg aag aat gag acc atc Ala Gln Leu Asn Pro Leu Phe Gly Pro Gln Leu Lys Asn Glu Thr Ile	60	65	70	304
tgg tac gtg cgc ttc ctg tgg gag tga cccgc cgccccgac ccaggtgcc Trp Tyr Val Arg Phe Leu Trp Glu *	75			356
agctctcgga atgactgtgg ctccactgtc cctgacaacc cttcgccg gaccctcccc cacacaacta tgtctggtca ccagctccct cctgctggca cccagagacc cggacccgca				416
gggcctgcct gggtcctgga agtcttccca gtcttcccag ccagccccgg ccctggggag				476
ccctggcac acgcagcggcc gaggggatgt cctgctccaa taccgcact gctctggagt				536
ttgcctctt tcccaaggag atgctgctgg ggagctggta tgggtgggt ctccctttt				596
acagacgggg cagatgccag gactcagccc atcctgagga ggacacgtgt cctcatggag				656
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ctggaaactg ggggggcctc tattgggta taggcaaggc ctttctctg gcatggatt				776
gttaatttc tgacacgtct agatgtaaaa ttctgaaaaa tggtaagca gagaaacatt				836
cacacacaaa aagcaacata gtcatgtggg tccagatggc ctcagtccta gatgtggca				896
ccctttgctg tgtctcctca gagtatcctg ttccgcctcc tgccacctgg acctccctca				956
gtggatgtct tccctccccc gaccccagcc tgtcagtccg agcacagtgc aggtttggct				1016
ctgacttggg cctttggctg cagtggggtt ggatttcaga gcctctcatg gcagcatcta				1076
agtgaccaga gctgggatga gagagggaa gggcaatgt gagtggcgct atgggacggg				1136
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gatggtaag aatggggcg tgccagcctg gcaggagtgg gaagcaacac gcaggggtcc				1256
cggacctctc cagccttgcc ctcacgctta cccgagctcc cagtgtggtt agcacagago				1316
tcacccacct tgcctggctc ccagctgggg cctgtcctca ctggtgctcc agggaaagaa				1376
acgacagcct cacttctgta tggactgctg atgtggcctg ccatcctgtt cagcgggcat				1436
tgtctttgga gcagcaggag aataggatgc ctctcactca catgccagtt cctggctggc				1496
cagctgctca gggctcaggc tggggcctcc cattgacatc ctccccctac actccctctc				1556
tgagcctccg tcgccccctcc tggggtaa ggggttttag tggacttgt gctgaaaacc				1616
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				1717

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 <212> DNA  
 <213> Homo sapiens

<220>  
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 <222> (6)...(1160)

<400> 613

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	Met Met Tyr Ile Thr Ile Tyr Ser Met Met Lys Ile Pro His		
1	5	10	
caa acc caa aaa aag aga tct ctc gag gat ccg aat tcg cgg ccg cgt	95		
Gln Thr Gln Lys Lys Arg Ser Leu Glu Asp Pro Asn Ser Arg Pro Arg			
15	20	25	30
cga ccg cgg tct atg gct gcg act tct cta atg tct gct ttg gct gcc	143		
Arg Pro Arg Ser Met Ala Ala Thr Ser Leu Met Ser Ala Leu Ala Ala			
35	40	45	
cgg ctg ctg cag ccc gcg cac agc tgc tcc ctt cgc ctt cgc cct ttc	191		
Arg Leu Leu Gln Pro Ala His Ser Cys Ser Leu Arg Leu Arg Pro Phe			
50	55	60	
cac ctc gcg gca gtt cga aat gaa gct gtt gtc att tct gga agg aaa	239		
His Leu Ala Val Arg Asn Glu Ala Val Val Ile Ser Gly Arg Lys			
65	70	75	
ctg gcc cag cag atc aag cag gaa gtg cgg cag gag gta gaa gag tgg	287		
Leu Ala Gln Gln Ile Lys Gln Glu Val Arg Gln Glu Val Glu Glu Trp			
80	85	90	
gtg gcc tca ggc aac aaa cgg cca cac ctg agt gtg atc ctg gtt ggc	335		
Val Ala Ser Gly Asn Lys Arg Pro His Leu Ser Val Ile Leu Val Gly			
95	100	105	110
gag aat cct gca agt cac tcc tat gtc ctc aac aaa acc agg gca gct	383		
Glu Asn Pro Ala Ser His Ser Tyr Val Leu Asn Lys Thr Arg Ala Ala			
115	120	125	
gca gtt gtg gga atc aac agt gag aca att atg aaa cca gct tca att	431		
Ala Val Val Gly Ile Asn Ser Glu Thr Ile Met Lys Pro Ala Ser Ile			
130	135	140	
tca gag gaa ttg ttg aat tta atc aat aaa ctg aat aat gat gat	479		
Ser Glu Glu Leu Leu Asn Leu Ile Asn Lys Leu Asn Asn Asp Asp			
145	150	155	
aat gta gat ggc ctc ctt gtt cag ttg cct ctt cca gag cat att gat	527		
Asn Val Asp Gly Leu Leu Val Gln Leu Pro Leu Pro Glu His Ile Asp			
160	165	170	
gag aga agg atc tgc aat gct gtt tct cca gac aag gat gtt gat ggc	575		
Glu Arg Arg Ile Cys Asn Ala Val Ser Pro Asp Lys Asp Val Asp Gly			
175	180	185	190
ttt cat gta att aat gta gga cga atg tgt ttg gat cag tat tcc atg	623		
Phe His Val Ile Asn Val Gly Arg Met Cys Leu Asp Gln Tyr Ser Met			
195	200	205	

tta ccg gct act cca tgg ggt gtg tgg gaa ata atc aag cga act ggc Leu Pro Ala Thr Pro Trp Gly Val Trp Glu Ile Ile Lys Arg Thr Gly 210 215 220	671
att cca acc cta ggg aag aat gtg gtt gtg gct gga agg tca aaa aac Ile Pro Thr Leu Gly Lys Asn Val Val Val Ala Gly Arg Ser Lys Asn 225 230 235	719
gtt gga atg ccc att gca atg tta ctg cac aca gat ggg gcg cat gaa Val Gly Met Pro Ile Ala Met Leu Leu His Thr Asp Gly Ala His Glu 240 245 250	767
cgt ccc gga ggt gat gcc act gtt aca ata tct cat cga tat act ccc Arg Pro Gly Gly Asp Ala Thr Val Thr Ile Ser His Arg Tyr Thr Pro 255 260 265 270	815
aaa gag cag ttg aag aaa cat aca att ctt gca gat att gta ata tct Lys Glu Gln Leu Lys His Thr Ile Leu Ala Asp Ile Val Ile Ser 275 280 285	863
gct gca ggt att cca aat ctg atc aca gca gat atg atc aag gaa gga Ala Ala Gly Ile Pro Asn Leu Ile Thr Ala Asp Met Ile Lys Glu Gly 290 295 300	911
gca gca gtc att gat gtg gga ata aat aga gtt cac gat cct gta act Ala Ala Val Ile Asp Val Gly Ile Asn Arg Val His Asp Pro Val Thr 305 310 315	959
gcc aaa ccc aag ttg gtt gga gat gtg gat ttt gaa gga gtc aga caa Ala Lys Pro Lys Leu Val Gly Asp Val Asp Phe Glu Gly Val Arg Gln 320 325 330	1007
aaa gct ggg tat atc act cca gtt cct gga ggt gtt ggc ccc atg aca Lys Ala Gly Tyr Ile Thr Pro Val Pro Gly Gly Val Gly Pro Met Thr 335 340 345 350	1055
gtg gca atg cta atg aag aat acc att att gct gca aaa aag gtg ctg Val Ala Met Leu Met Lys Asn Thr Ile Ile Ala Ala Lys Lys Val Leu 355 360 365	1103
agg ctt gaa gag cga gaa gtg ctg aag tct aaa gag ctt ggg gta gcc Arg Leu Glu Glu Arg Glu Val Leu Lys Ser Lys Glu Leu Gly Val Ala 370 375 380	1151
act aat taa ctactgt gtcttctgtg tcacaaacag cactccaggc cagctcaaga Thr Asn * 385	1207
agcaaagcag gccaatagaa atgcaatatt ttaatttat tctactgaaa tggtttaaaa tgatgccttg tatttattga aagcttaat ggggtgggtgt ttctgcacat acctctgcag tacctcacca gggagcattc cagtatcatg cagggtcctg tgatctagcc aggagcagcc attaacctag tgattaatat gggagacatt accatatgga ggatggatgc ttcactttgt caagcacctc agttacacat tcgcctttc taggattgca tttcccaagt gctattgcaa taacagttga tactcattt aggtacaaa cctttgagt tcaactgatc aaaccaaagg aaaagtgttg ctagagaaaa ttagggaaaa ggtaaaaag aaaaaatggt agtaattgag cagaaaaaaaaa ttaatttata tatgtattga ttggcaacca gatttatcta agtagaactg	1267 1327 1387 1447 1507 1567 1627 1687

aattggctag gaaaaaaagaa aaactgcatg ttaatcattt tcctaagctg tccttttag	1747
gcttagtcag tttattggga aaatgtttag gattattcct tgctattagt actcatttt	1807
tgtatgttac ctttcagtaa gttctccca ttttagttt cttaggactga aaggattctt	1867
ttctacatta tacatgtgtg ttgtcatatt tggctttgc tatatacttt aacttcattt	1927
ttaaattttt gtattgtata gtttcttgg tgtatcttaa aaccttattt tgaaaaacaa	1987
acttggctt gataatcattt gggcagctt ggtaagtacg caacttactt ttccaccaaa	2047
gaactgtcag cagctgcctg cttttctgtg atgtatgtat cctgttgact ttccagaaa	2107
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<212> DNA  
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<220>  
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cgagaaaacg tttctcttcc ctctcagttt gcgcacacc	114
atg gcg gcc cct gcc Met Ala Ala Pro Ala	
1 5	
cag cag act act cag cct ggc ggc ggg aag cgc aaa ggc aag gct cag	162
Gln Gln Thr Thr Gln Pro Gly Gly Lys Arg Lys Gly Lys Ala Gln	
10 15 20	
tat gtg ctg gcc aag cgc gct cgg cgc tgc gac gct ggc ggg ccc cgt	210
Tyr Val Leu Ala Lys Arg Ala Arg Arg Cys Asp Ala Gly Gly Pro Arg	
25 30 35	
cag cta gag ccc ggg cta cag ggc atc ctc atc acc tgc aat atg aac	258
Gln Leu Glu Pro Gly Leu Gln Gly Ile Leu Ile Thr Cys Asn Met Asn	
40 45 50	
gag cgc aag tgc gtg gag gag gcc tac agc ctc ctc aac gaa tac ggc	306
Glu Arg Lys Cys Val Glu Glu Ala Tyr Ser Leu Leu Asn Glu Tyr Gly	
55 60 65	
gac gac atg tat ggg cca gaa aag ttt aca gac aag gat cag cag ccc	354
Asp Asp Met Tyr Gly Pro Glu Lys Phe Thr Asp Lys Asp Gln Gln Pro	
70 75 80 85	
tct gga agt gag gga gag gat gat gat gcg gag gct gcc ttg aag aaa	402
Ser Gly Ser Glu Gly Glu Asp Asp Ala Glu Ala Ala Leu Lys Lys	
90 95 100	
gaa gtt ggt gac att aag gca tct aca gag atg agg tta aga aga ttc	450
Glu Val Gly Asp Ile Lys Ala Ser Thr Glu Met Arg Leu Arg Arg Phe	

105	110	115	
cag tca gtg gaa agt gga gca aat aac gtt gtc ttc atc agg aca ctt Gln Ser Val Glu Ser Gly Ala Asn Asn Val Val Phe Ile Arg Thr Leu 120	125	130	498
ggg ata gag cct gag aaa ttg gtg cat cat att ctc cag gat atg tac Gly Ile Glu Pro Glu Lys Leu Val His His Ile Leu Gln Asp Met Tyr 135	140	145	546
aaa acc aag aaa aag aag act cga gtt att ttg cga atg tta ccc atc Lys Thr Lys Lys Lys Thr Arg Val Ile Leu Arg Met Leu Pro Ile 150	155	160	594
tca ggc aca tgc aag gct ttt tta gaa gat atg aaa tat gca gaa Ser Gly Thr Cys Lys Ala Phe Leu Glu Asp Met Lys Lys Tyr Ala Glu 170	175	180	642
aca ttt ttg gaa ccc tgg ttt aaa gct cca aac aaa ggg aca ttt cag Thr Phe Leu Glu Pro Trp Phe Lys Ala Pro Asn Lys Gly Thr Phe Gln 185	190	195	690
att gtg tac aaa tct cga aat aac agt cat gtg aat aga gaa gaa gtt Ile Val Tyr Lys Ser Arg Asn Asn Ser His Val Asn Arg Glu Glu Val 200	205	210	738
atc aga gaa ttg gca gga ata gtg tgc acc ctc aat tca gaa aat aaa Ile Arg Glu Leu Ala Gly Ile Val Cys Thr Leu Asn Ser Glu Asn Lys 215	220	225	786
gtg gat ctc acc aat cca cag tac aca gtg gta gta gaa atc atc aaa Val Asp Leu Thr Asn Pro Gln Tyr Thr Val Val Glu Ile Ile Lys 230	235	240	834
gct gtc tgt tgc ctg agt gtt gtg aaa gat tac atg ttg ttt aga aaa Ala Val Cys Cys Leu Ser Val Val Lys Asp Tyr Met Leu Phe Arg Lys 250	255	260	882
tac aat ctc cag gag gtg gtg aag agc cct aag gat ccg tca cag ctt Tyr Asn Leu Gln Glu Val Val Lys Ser Pro Lys Asp Pro Ser Gln Leu 265	270	275	930
aac tca aag cag gga aat ggg aaa gaa gct aaa ctg gaa tct gcg gac Asn Ser Lys Gln Gly Asn Gly Lys Glu Ala Lys Leu Glu Ser Ala Asp 280	285	290	978
aaa tca gac caa aac aac aca gca gaa gga aaa aat aac cag cag gta Lys Ser Asp Gln Asn Asn Thr Ala Glu Gly Lys Asn Asn Gln Gln Val 295	300	305	1026
cca gag aat act gag gag ctg ggg cag aca aaa cca acg tct aat cca Pro Glu Asn Thr Glu Glu Leu Gly Gln Thr Lys Pro Thr Ser Asn Pro 310	315	320	1074
cag gtg gta aat gag gga gga gcc aaa cct gaa ctt gca agt caa gcc Gln Val Val Asn Glu Gly Gly Ala Lys Pro Glu Leu Ala Ser Gln Ala 330	335	340	1122
aca gaa gga tcc aag tca aat gaa aat gac ttc tca tag gaagtcat Thr Glu Gly Ser Lys Ser Asn Glu Asn Asp Phe Ser * 345	350		1171
ggtgttggag ctgacagtcc agtgtcgcaa ttttggagg caagatgtga gagagacgag			1231

aaccatttta ggcatagaac tacagacatt tctgaaaagg ttgggtatga agaacttcag	1291	
tcttctgagt atac	1305	
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cagggtgtt tcaccaacca aggagcaagt atcagacaca gaggacaaac agaga atg	118	
Met		
1		
agg gca gac gag atc aaa gat gcc atc tac gtg acc atg gag atc ctg	166	
Arg Ala Asp Glu Ile Lys Asp Ala Ile Tyr Val Thr Met Glu Ile Leu		
5	10	15
tcc aac tgg ggc aac tcg tgg tgg ggt ctc aca gaa gtc gag ttc	214	
Ser Asn Trp Gly Asn Ser Trp Trp Val Gly Leu Thr Glu Val Glu Phe		
20	25	30
ttt gac ttg aat gac aca aag ctt tat gtg tcg ccc cac gat gtg gat	262	
Phe Asp Leu Asn Asp Thr Lys Leu Tyr Val Ser Pro His Asp Val Asp		
35	40	45
atc cgg aac aca gcc acg cct ggg gag ctg ggc cgc ctc gtc aac agg	310	
Ile Arg Asn Thr Ala Thr Pro Gly Glu Leu Gly Arg Leu Val Asn Arg		
50	55	60
55		65
aac tta gct ggc aag aaa gac tcc tcc ccg tgg acc tgc ccc ttc cac	358	
Asn Leu Ala Gly Lys Lys Asp Ser Ser Pro Trp Thr Cys Pro Phe His		
70	75	80
cca cca ctc cag ctg ttt ttt gtt att cga aac aca aga cag ctg ggg	406	
Pro Pro Leu Gln Leu Phe Val Ile Arg Asn Thr Arg Gln Leu Gly		
85	90	95
85		
gac ttc cat ctg gcc aag atc aag gtt cggtt aat tac tgg aca gct gat	454	
Asp Phe His Leu Ala Lys Ile Lys Val Arg Asn Tyr Trp Thr Ala Asp		
100	105	110
100		
ggc gat ctt gac att ggt gcc aag aac gtg aag ctt tac gtc aac aga	502	
Gly Asp Leu Asp Ile Gly Ala Lys Asn Val Lys Leu Tyr Val Asn Arg		
115	120	125
115		
aac ctc atc ttc aat ggc aag tta gac aaa gga gat agg gag gcc cca	550	
Asn Leu Ile Phe Asn Gly Lys Leu Asp Lys Gly Asp Arg Glu Ala Pro		
130	135	140
130		145
gct gac cac agc atc ctg gtt gac cag aag aac gag aag agc gag caa	598	
Ala Asp His Ser Ile Leu Val Asp Gln Lys Asn Glu Lys Ser Glu Gln		
150	155	160
150		
cta gag gag gcc atg aac gct cac tcg gaa gaa agc aaa ggc acc cat	646	
cta gag gag gcc atg aac gct cac tcg gaa gaa agc aaa ggc acc cat	646	

Leu Glu Glu Ala Met Asn Ala His Ser Glu Glu Ser Lys Gly Thr His			
165	170	175	
gag atg gct ggt gcc agc ggg gac aag gag ctt ggt ctc ggt tgc tca			694
Glu Met Ala Gly Ala Ser Gly Asp Lys Glu Leu Gly Leu Gly Cys Ser			
180	185	190	
ccg cca gct gaa aca tta gcg gat gca aag ctt tct tca caa gga aat			742
Pro Pro Ala Glu Thr Leu Ala Asp Ala Lys Leu Ser Ser Gln Gly Asn			
195	200	205	
gtg tct ggc aaa aga aag aat tct act aat tgc agg aaa gac agt ttg			790
Val Ser Gly Lys Arg Lys Asn Ser Thr Asn Cys Arg Lys Asp Ser Leu			
210	215	220	225
tcc cag tta gag gaa tat ttg aga ctg tcg gca gtc ccc act tcg atg			838
Ser Gln Leu Glu Glu Tyr Leu Arg Leu Ser Ala Val Pro Thr Ser Met			
230	235	240	
ggg gac atg ccc agt gct cct gcc act tcc cca cct gtg aag tgc cct			886
Gly Asp Met Pro Ser Ala Pro Ala Thr Ser Pro Pro Val Lys Cys Pro			
245	250	255	
cct gtc cat gag gag ccc tct ctc atc caa caa ctg gaa aac ctc atg			934
Pro Val His Glu Glu Pro Ser Leu Ile Gln Gln Leu Glu Asn Leu Met			
260	265	270	
ggc aga aaa atc tgt gag cca ccc ggg aaa acc cca tcc tgg tta caa			982
Gly Arg Lys Ile Cys Glu Pro Pro Gly Lys Thr Pro Ser Trp Leu Gln			
275	280	285	
cct tct ccc acc ggc aag gac agg aag cag gga ggc agg aag cca aaa			1030
Pro Ser Pro Thr Gly Lys Asp Arg Lys Gln Gly Arg Lys Pro Lys			
290	295	300	305
ccc ctc tgg ctt agt ccc gag aag ccc ctg gcc tgg aag ggc agg ctc			1078
Pro Leu Trp Leu Ser Pro Glu Lys Pro Leu Ala Trp Lys Gly Arg Leu			
310	315	320	
cca tca gac gat gtc atc ggt gag ggt cct gga gag acc gag gcc agg			1126
Pro Ser Asp Asp Val Ile Gly Glu Gly Pro Gly Glu Thr Glu Ala Arg			
325	330	335	
gat aaa ggc cta cgg cat gag cca ggg tgg ggg acc agc cgg agt gtc			1174
Asp Lys Gly Leu Arg His Glu Pro Gly Trp Gly Thr Ser Arg Ser Val			
340	345	350	
aac acc aag gag aga ccc cag agg gca acc acc aaa gtc cac agt gat			1222
Asn Thr Lys Glu Arg Pro Gln Arg Ala Thr Thr Lys Val His Ser Asp			
355	360	365	
gac tca gac atc ttt aac cag ccc aac aga gag cgc cct gct agt			1270
Asp Ser Asp Ile Phe Asn Gln Pro Pro Asn Arg Glu Arg Pro Ala Ser			
370	375	380	385
ggg agg agg ggc tca agg aag gat gct ggc agc agt agt cat ggg gac			1318
Gly Arg Arg Gly Ser Arg Lys Asp Ala Gly Ser Ser Ser His Gly Asp			
390	395	400	
gac cag cca gcc agc aga gaa gac acc tgg tct tcc agg acg ccg tca			1366
Asp Gln Pro Ala Ser Arg Glu Asp Thr Trp Ser Ser Arg Thr Pro Ser			
405	410	415	
cggtcaagg tgg cgccagt gagg caccatcac gagg tca tgg			1414

Arg Ser Arg Trp Arg Ser Glu Gln Glu His Thr Leu His Glu Ser Trp		
420	425	430
agc tcc ctc agt gcc ttc gac cgc tcc cac cgg gga cgc atc tcc aac		1462
Ser Ser Leu Ser Ala Phe Asp Arg Ser His Arg Gly Arg Ile Ser Asn		
435	440	445
acg gag ctc ccg ggg gac atc ctg gat gag ctc ctg cag caa aag agc		1510
Thr Glu Leu Pro Gly Asp Ile Leu Asp Glu Leu Leu Gln Gln Lys Ser		
450	455	460
465		
agc cgg cac agc gac ttg ccc ccc tcc aag aag ggg gag cag cca ggg		1558
Ser Arg His Ser Asp Leu Pro Pro Ser Lys Lys Gly Glu Gln Pro Gly		
470	475	480
ctg tcg aga ggg cag gat ggc tac tct gga gag aca gac gct ggg ggt		1606
Leu Ser Arg Gly Gln Asp Gly Tyr Ser Gly Glu Thr Asp Ala Gly Gly		
485	490	495
gac ttt aaa atc ccc gtc ttg cct tat gga cag cgc ttg gtc att gac		1654
Asp Phe Lys Ile Pro Val Leu Pro Tyr Gly Gln Arg Leu Val Ile Asp		
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Ile Lys Ser Thr Trp Gly Asp Arg His Tyr Val Gly Leu Asn Gly Ile		
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Glu Ile Phe Ser Ser Lys Gly Glu Pro Val Gln Ile Ser Asn Ile Lys		
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Ala Asp Pro Pro Asp Ile Asn Ile Leu Pro Ala Tyr Gly Lys Asp Pro		
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cgc gtg gtc acc aac ctc atc gac ggg gtg aac agg acc cag gat gac		1846
Arg Val Val Thr Asn Leu Ile Asp Gly Val Asn Arg Thr Gln Asp Asp		
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Met His Val Trp Leu Ala Pro Phe Thr Arg Gly Arg Ser His Ser Ile		
580	585	590
acc att gac ttc acg cac cct tgc cac gtt gcc ctg atc aga att tgg		1942
Thr Ile Asp Phe Thr His Pro Cys His Val Ala Leu Ile Arg Ile Trp		
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Asn Tyr Asn Lys Ser Arg Ile His Ser Phe Arg Gly Val Lys Asp Ile		
610	615	620
625		
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Thr Met Leu Leu Asp Thr Gln Cys Ile Phe Glu Gly Glu Ile Ala Lys		
630	635	640
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Ala Ser Gly Thr Leu Ala Gly Ala Pro Glu His Phe Gly Asp Thr Ile		
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Leu Phe Thr Thr Asp Asp Ile Leu Glu Ala Ile Phe Tyr Ser Asp		
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Glu Met Phe Asp Leu Asp Val Gly Ser Leu Asp Ser Leu Gln Asp Glu				
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Glu Ala Met Arg Arg Pro Ser Thr Ala Asp Gly Glu Gly Asp Glu Arg				
690	695	700	705	
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Pro Phe Thr Gln Ala Gly Leu Gly Ala Asp Glu Arg Ile Pro Glu Leu				
710	715	720		
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Glu Leu Pro Ser Ser Pro Val Pro Gln Val Thr Thr Pro Glu Pro				
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Gly Ile Tyr His Gly Ile Cys Leu Gln Leu Asn Phe Thr Ala Ser Trp				
740	745	750		
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Gly Asp Leu His Tyr Leu Gly Leu Thr Gly Leu Glu Val Val Gly Lys				
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Glu Gly Gln Ala Leu Pro Ile His Leu His Gln Ile Ser Ala Ser Pro				
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Arg Asp Leu Asn Glu Leu Pro Glu Tyr Ser Asp Asp Ser Arg Thr Leu				
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Asp Lys Leu Ile Asp Gly Thr Asn Ile Thr Met Glu Asp Glu His Met				
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Trp Leu Ile Pro Phe Ser Pro Gly Leu Asp His Val Val Thr Ile Arg				
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ctg gac agg gcc gaa agc atc gca ggc ctg cgc ttc tgg aac tac aat				2662
Leu Asp Arg Ala Glu Ser Ile Ala Gly Leu Arg Phe Trp Asn Tyr Asn				
835	840	845		
aaa tct ccc gag gac acc tat cgc ggg gcc aag att gtc cac gtc tcc				2710
Lys Ser Pro Glu Asp Thr Tyr Arg Gly Ala Lys Ile Val His Val Ser				
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Leu Asp Gly Leu Cys Val Ser Pro Pro Glu Gly Phe Leu Ile Arg Lys				
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Gly Pro Gly Asn Cys His Phe Asp Phe Ala Gln Glu Ile Leu Phe Val				
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Asp Tyr Leu Arg Ala Gln Leu Leu Pro Gln Pro Ala Arg Arg Leu Asp				
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Met Arg Ser Leu Glu Cys Ala Ser Met Asp Tyr Glu Ala Pro Leu Met				
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Glu Lys Ile Pro Leu Ser Glu Asn Asn Ile Ala Ala Phe Pro Asp Ser				
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Val Tyr Asn Gly Ile Leu Ala Met Val Ser His Leu Val Gly Gly Ile				
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Leu Pro Thr Cys Glu Pro Thr Val Pro Tyr His Thr Ile Leu Phe Thr				
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Ala Leu Ile Arg Arg Tyr Gln Glu Ile Glu Glu Asp Arg Lys Lys Ala						
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Gly Arg Gly Arg Gly Arg Gly Ser Pro His Leu Ser						
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Gly Ala Gly Asp Thr Ser Ile Ser Asp Arg Lys Ser Lys Glu Trp Glu						
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Glu Arg Arg Gln Asn Ile Glu Lys Met Asn Glu Glu Met Glu Lys						
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atc gcc gag tat gag cgc aac cag cgg gaa ggg gtt ctt gaa ccc aac						697
Ile Ala Glu Tyr Glu Arg Asn Gln Arg Glu Gly Val Leu Glu Pro Asn						
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cca gtg cgg aac ttc ctg gac gac ccc cgg cga cgc agc ggg ccc ctg						745
Pro Val Arg Asn Phe Leu Asp Asp Pro Arg Arg Arg Ser Gly Pro Leu						
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Glu Glu Ser Glu Arg Asp Arg Arg Glu Glu Ser Arg Arg His Gly Arg						
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Asn Trp Gly Gly Pro Asp Phe Glu Arg Val Arg Cys Gly Leu Glu His						
225	230		235			
gag cgg cag ggc cgc cga gct ggc ctg ggc agt gct gga gac atg acg						889
Glu Arg Gln Gly Arg Arg Ala Gly Leu Gly Ser Ala Gly Asp Met Thr						

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act ggc cag tgg agg cgc gag tgg gat gcc gag aag acc gat ggg atg Thr Gly Gln Trp Arg Arg Glu Trp Asp Ala Glu Lys Thr Asp Gly Met	290	295	1033
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gggggcggcc ggcagcagga gcctggaaa gaggccctcg ccaggtgatg gcagggccag	2167
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ctttcctac tttgtcttgt tacaaggcct cagcaatcca cagaactctc ttccttcct	2287
tccacctgtc agcttctctg cttctgagat aagaaccatt tgtgtaaacac caacactaa	2347
cttcagaaag acatgcattt tttgtgttaa tcaaaccga tgcttcaga tgacctactt	2407
acatcttcaa tgtggataag ataaagaaca aaacacatgc atctaaactg ctggcaatc	2467
cagttgactt ttaaatgtaa gaatggaatt ccaaacactt aacacattca gctatatgac	2527
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acgtataaaaa aaaaaaaaaa	2606

<210> 618  
 <211> 2666  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (121)..(867)

<400> 618	
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acctgcaggc ggccgcacta gtgatttcc cgggtcgacg atttcgtgcg gagacggcaa	120
atg gcg gac ttc gac acc tac gac gat cgg gcc tac agc agc ttc ggc	168
Met Ala Asp Phe Asp Thr Tyr Asp Asp Arg Ala Tyr Ser Ser Phe Gly	
1 5 10 15	
ggc ggc aga ggg tcc cgc ggc agt gct ggt ggc cat ggt tcc cgt agc	216
Gly Gly Arg Gly Ser Arg Gly Ser Ala Gly Gly His Gly Ser Arg Ser	
20 25 30	
cag aag gag ttg ccc aca gag ccc ccc tac aca gca tac gta gga aat	264
Gln Lys Glu Leu Pro Thr Glu Pro Pro Tyr Thr Ala Tyr Val Gly Asn	
35 40 45	
cta cct ttc aat acg gtt cag ggc gac ata gat gct atc ttt aag gat	312
Leu Pro Phe Asn Thr Val Gln Gly Asp Ile Asp Ala Ile Phe Lys Asp	
50 55 60	
ctc agc ata agg agt gta cgg cta gtc aga gac aaa gac aca gat aaa	360
Leu Ser Ile Arg Ser Val Arg Leu Val Arg Asp Lys Asp Thr Asp Lys	
65 70 75 80	

ttt aaa gga ttc tgc tat gta gaa ttc gat gaa gtg gat tcc ctt aag Phe Lys Gly Phe Cys Tyr Val Glu Phe Asp Glu Val Asp Ser Leu Lys 85 90 95	408
gaa gcc ttg aca tac gat ggt gca ctg ttg ggc gat cgg tca ctt cgt Glu Ala Leu Thr Tyr Asp Gly Ala Leu Leu Gly Asp Arg Ser Leu Arg 100 105 110	456
gtg gac att gca gaa ggc aga aaa caa gat aaa ggt ggc ttt gga ttc Val Asp Ile Ala Glu Gly Arg Lys Gln Asp Lys Gly Phe Gly Phe 115 120 125	504
aga aaa ggt gga cca gat gac aga gga atg ggt agc tct cga gaa tct Arg Lys Gly Gly Pro Asp Asp Arg Gly Met Gly Ser Ser Arg Glu Ser 130 135 140	552
aga ggt gga tgg gat tcc cgg gat gac ttc aat tct ggc ttc agg gat Arg Gly Gly Trp Asp Ser Arg Asp Asp Phe Asn Ser Gly Phe Arg Asp 145 150 155 160	600
gac ttc tta ggg ggc agg gga ggt agt cgc cca ggc gac cgg cga aca Asp Phe Leu Gly Arg Gly Ser Arg Pro Gly Asp Arg Arg Thr 165 170 175	648
ggc ccc ccc atg ggc agc cgc ttc aga gat ggc cct ccc ctc cgt gga Gly Pro Pro Met Gly Ser Arg Phe Arg Asp Gly Pro Pro Leu Arg Gly 180 185 190	696
tcc aac atg gat ttc aga gaa ccc aca gaa gag gaa aga gca cag aga Ser Asn Met Asp Phe Arg Glu Pro Thr Glu Glu Arg Ala Gln Arg 195 200 205	744
cca cga ctc cag ctt aaa cct cga aca gtc gcg acg ccc ctc aat caa Pro Arg Leu Gln Leu Lys Pro Arg Thr Val Ala Thr Pro Leu Asn Gln 210 215 220	792
gta gcc aat ccc aac tct gct atc ttc ggg ggt gcc agg cct aga gag Val Ala Asn Pro Asn Ser Ala Ile Phe Gly Gly Ala Arg Pro Arg Glu 225 230 235 240	840
gaa gtc gtt caa aag gag caa gaa tga gcctg cggttggag ggaatggggc Glu Val Val Gln Lys Glu Gln Glu * 245	892
gtgggggtt agagcaggac cacagcctgg tgagtccccg ggcagccgtc ctgcagccgc cactcctgcg cctgccattg gcctcctcac agcgaaaca cagcttgtga gtgcatgtca gctgttaaca agtggtttt agtacattct gggcttgct gtatctatct agtgcctgtt tgtgcgtttt ttctttctt ccgcgtcttc cccatttcc ttctgtcctt ttctcctgc tccttgtttt cccagcagca catgggttc ctggaggag cagaggtggc cgccgtggg ggcggttgg gctgcgtgc tgcgtcattt ttctttgtt ttctcttac tttagacact ggcccaactc caggcgttc cttcattcc ctcaagtgtt ctcttctgac ctgcgtgtt agttctgtat tgctgggtt tccaacaaaa accagagtca ctgacagagg gaacagcaga gaccctgttg gtattcagct gtgatggata tagagaatca gaggcacctt gtttcacaa ctaggataaa aatatctgca gggtccttc cattcctatt tagagggagt cctggctcca	952 1012 1072 1132 1192 1252 1312 1372 1432 1492

tgacccccc	ccgagtggac	tgtccaagca	gataggctca	cacgagaaac	agtgaggctg	1552
aaaggggggg	ctatggaaga	gcggtaggga	gtccacggag	aagatgcagt	aatgcttgc	1612
atgcattcac	acgtgtgtgt	gtcccagcta	gttcactcct	ttcgccgtgc	gtggtggagg	1672
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cataatgaga	tactgtgctt	cccacctccc	cttcagttca	gagccaaaat	gggtctagaa	1912
tctggcactt	tactcatttc	ctttgataaaa	ttgtactatg	cagagctgtc	aggaaccttc	1972
agatagcagt	agaggactgc	agctgtctag	gtctgcggcc	acatcttggg	gacacactgg	2032
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cttgaacgcc	tgcgtgtgaa	cagatgaaaa	atccttcagt	acccaagtcc	cagtctgtcc	2152
tatggggagc	agtttggggg	cggccggcag	caggagcctg	ggaaagaggc	cctcgccagg	2212
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ctctctctcc	ttccttccac	ctgtcagctt	ctctgcttct	gagataagaa	ccattttgtgt	2392
aacaccaaca	cttaacttca	gaaagacatg	cattatgtgg	tgtaatcaaa	cccgatgctt	2452
tcagatgacc	tacttacatc	ttcaatgtgg	ataagataaa	gaacaaaaca	catgcatcta	2512
aactgctggg	caatccagtt	gactttaaa	tgtaagaatg	gaattccaaa	cacttaacac	2572
attcagctat	atgacagaaa	gtaaatctat	ggatatggta	ttttgtgaat	gatctttaa	2632
ataaaaagaaa	accttacgta	ataaaaaaaaaa	aaaa			2666

<210> 619  
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 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (399)..(686)

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cgactttttt	ttttttttt	aatttttcag	ctaaaacagc	ggaagaggtg	atttattata	180
tggttgttac	actcgccac	aaataaacac	agaaatagtc	cagaatgtca	caggtccagg	240
gcagaggacc	aacatggca	ttttgttat	gagcaaggtg	ggtctcagag	gtgatcggcg	300
atcagagggc	gatgaagttc	tagatccatt	gagacaagct	ctagacagta	gcatgcagtc	360

ccacaacttg taccagcatc cccagcgctt ggcattcc	atg ttt ctg ctc ctg Met Phe Leu Leu Leu	413
	1 5	
tgg cct cca cgg tgc aac aag cta gcg gtt tac ttg gac ctc tgc ctc Trp Pro Pro Arg Cys Asn Lys Leu Ala Val Tyr Leu Asp Leu Cys Leu	10 15 20	461
atc ttt ctt ctt ttg cgc ttc agc ctg cgc att cgc ttc ttc ctc cac Ile Phe Leu Leu Arg Phe Ser Leu Arg Ile Arg Phe Phe Leu His	25 30 35	509
ttg gct ctc atg gcg cag agg ttt cca aaa aaa tgg cgc tac cca cgc Leu Ala Leu Met Ala Gln Arg Phe Pro Lys Trp Arg Tyr Pro Arg	40 45 50	557
gtc cgc cca cgc gtc cgc gga cgc gtg ggt ttt ttg gga aac ctc tgc Val Arg Pro Arg Val Arg Gly Arg Val Gly Phe Phe Gly Asn Leu Cys	55 60 65	605
gcc atg aga gcc aag tgg agg aag aag cga atg cgc agg ctg aag cgc Ala Met Arg Ala Lys Trp Arg Lys Arg Met Arg Arg Leu Lys Arg	70 75 80 85	653
aaa aga aga aag atg agg cag agg tcc aag taa accgcttag cttgttgac Lys Arg Arg Lys Met Arg Gln Arg Ser Lys *	90 95	704
cgtggaggcc acaggaggcag aaacatggaa tgccagacgc tggggatgtct ggtacaagtt	764	
gtgggactgc atgctactgt ctagagctt tctcaatggg tctagaacctt catcgccctc	824	
tgatcgccga tcacctctga gaccacaccc gctataaac aaaatgcccc ttttgttct	884	
ctgccccttggaa cctgtgacat tctggactat ttctgtgttt atttgtggcc gagtgtaaca	944	
accatataat aaatcaccc tcggctgtt ttagctgaag aattaaaaaa aaaaaaaaaa	1002	

<210> 620  
 <211> 1668  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (187) ..(1236)

<400> 620	
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atccactagt ccagtgtggt ggaattccct ccgcacatc ctccacctct ctgggtccag	120
cgagcggtgc cggccaggg tcaagcggag ggctccgacg ggcggacgg agcgaagcgc	180
cgagcc atg gcg cac caa acg ggc atc cac gcc acg gaa gag ctg aag Met Ala His Gln Thr Gly Ile His Ala Thr Glu Glu Leu Lys	228
1 5 10	
gaa ttc ttt gcc aag gca cgg gct ggc tct gtg cgg ctc atc aag gtt Glu Phe Ala Lys Ala Arg Ala Gly Ser Val Arg Leu Ile Lys Val	276

15	20	25	30	
gtg att gag gag cag ctc gtg ctg ggt gcc tcg cag gag cca gta Val Ile Glu Asp Glu Gln Leu Val Leu Gly Ala Ser Gln Glu Pro Val				324
35	40	45		
ggc cgc tgg gat cag gac tat gac agg gcc gtg ctg cca ctg ctg gac Gly Arg Trp Asp Gln Asp Tyr Asp Arg Ala Val Leu Pro Leu Leu Asp				372
50	55	60		
gcc cag cag ccc tgc tac ctg ctc tac cgc ctc gac tca cag aat gct Ala Gln Gln Pro Cys Tyr Leu Leu Tyr Arg Leu Asp Ser Gln Asn Ala				420
65	70	75		
cag ggc ttc gaa tgg ctc ttc ctc gcc tgg tcg cct gat aac tcc ccc Gln Gly Phe Glu Trp Leu Phe Leu Ala Trp Ser Pro Asp Asn Ser Pro				468
80	85	90		
gtg cgg ctg aag atg ctg tac gcg gcc acg cgg gcc aca gtg aaa aag Val Arg Leu Lys Met Leu Tyr Ala Ala Thr Arg Ala Thr Val Lys Lys				516
95	100	105	110	
gag ttt gga ggt ggc cac atc aag gat gag ctc ttc ggg act gtg aag Glu Phe Gly Gly His Ile Lys Asp Glu Leu Phe Gly Thr Val Lys				564
115	120	125		
gat gac ctc tct ttt gct ggg tac cag aaa cac ctg tcg tcc tgt gcg Asp Asp Leu Ser Phe Ala Gly Tyr Gln Lys His Leu Ser Ser Cys Ala				612
130	135	140		
gca cct gcc ccg ctg acc tcg gct gag aga gag ctc cag cag atc cgc Ala Pro Ala Pro Leu Thr Ser Ala Glu Arg Glu Leu Gln Gln Ile Arg				660
145	150	155		
att aac gag gtg aag aca gag atc agt gtg gaa agc aag cac cag acc Ile Asn Glu Val Lys Thr Glu Ile Ser Val Glu Ser Lys His Gln Thr				708
160	165	170		
ctg cag ggc ctc gcc ttc ccc ctg cag cct gag gcc cag cgg gca ctc Leu Gln Gly Leu Ala Phe Pro Leu Gln Pro Glu Ala Gln Arg Ala Leu				756
175	180	185	190	
cag cag ctc aag cag aaa atg gtc aac tac atc cag atg aag ctg gac Gln Gln Leu Lys Gln Lys Met Val Asn Tyr Ile Gln Met Lys Leu Asp				804
195	200	205		
cta gag cgg gaa acc att gag ctg gtg cac aca gag ccc acg gat gtg Leu Glu Arg Glu Thr Ile Glu Leu Val His Thr Glu Pro Thr Asp Val				852
210	215	220		
gcc cag ctg ccc tcc cgg gtc ccc cga gat gct gcc cgc tac cac ttc Ala Gln Leu Pro Ser Arg Val Pro Arg Asp Ala Ala Arg Tyr His Phe				900
225	230	235		
ttc ctc tac aag cac acc cat gag ggc gac ccc ctt gag tct gta gtg Phe Leu Tyr Lys His Thr His Glu Gly Asp Pro Leu Glu Ser Val Val				948
240	245	250		
ttc atc tac tcc atg ccg ggg tac aag tgc agc atc aag gag cga atg Phe Ile Tyr Ser Met Pro Gly Tyr Lys Cys Ser Ile Lys Glu Arg Met				996
255	260	265	270	
ctc tac tcc agc tgc aag agc cgc ctc ctc gac tcc gtg gag cag gac Leu Tyr Ser Ser Cys Lys Ser Arg Leu Leu Asp Ser Val Glu Gln Asp				1044

275

280

285

ttc cat ctg gag atc gcc aag aaa att gag att ggc gat ggg gca gag Phe His Leu Glu Ile Ala Lys Lys Ile Glu Ile Gly Asp Gly Ala Glu 290 295 300	1092
ctg acg gca gag ttc ctc tac gac gag gtg cac ccc aag caa cac gcc Leu Thr Ala Glu Phe Leu Tyr Asp Glu Val His Pro Lys Gln His Ala 305 310. 315	1140
ttc aag cag gcc ttc gcc aag ccc aag ggc cca ggg ggc aag cgg ggc Phe Lys Gln Ala Phe Ala Lys Pro Lys Gly Pro Gly Gly Lys Arg Gly 320 325 330	1188
cat aag cgc ctc atc cgc ggc ccg ggt gaa aat ggg gat gac agc tag His Lys Arg Leu Ile Arg Gly Pro Gly Glu Asn Gly Asp Asp Ser *335 340 345 350	1236
gaggctggag cagggccggc cacgtgtgga ctgtggggat gcccaccccttc cgctccctgc	1296
caccatcctc cttcctgggc tccaggaaag tgtttctggg aggtcaggag ggctggcagc	1356
tgaacgcact tgcagcgtcc gagggccacc gggctggcat tttgtgaccc ttccctgttg	1416
ctgtccctgc atctcgctcg tgtgcccagg gtgtccgggg accctgcctg gctggcttaa	1476
gggggctggg tcaggggcct ggcataacc tggcctcccg gggagctgag actagggtcc	1536
cagcacagcc cagaaacccct tggccacaag aagtggggtc agtcagggtc gggcagggg	1596
tcaactgcagt ttgggatggt tgaatgctgt attttctaaa gaataaaata tttttaatc	1656
aaaaaaaaaa aa	1668.

<210> 621  
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<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (82)...(1872)

<220>  
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ccgaacccgg gagctggcgc c atg gtg ctg ttg cac gtg ctg ttt gag cac Met Val Leu Leu His Val Leu Phe Glu His 1 5 10	111
gcg gtc ggc tac gcg ctg gcg ctg aag gaa gtg gag gag atc agt Ala Val Gly Tyr Ala Leu Leu Ala Leu Lys Glu Val Glu Glu Ile Ser 15 20 25	159
ctg ctg cag ccg cag gtg gag gag tcc gtg ctc aac ctg ggc aaa ttc Leu Leu Gln Pro Gln Val Glu Ser Val Leu Asn Leu Gly Lys Phe	207

30	35	40	
cac agc atc gtt cgt ctg gtg gcc ttt tgt ccc ttt gcc tca tcc cag His Ser Ile Val Arg Leu Val Ala Phe Cys Pro Phe Ala Ser Ser Gln			255
45	50	55	
gtt gcc ttg gaa aat gcc aac gcc gtg tct gaa ggg gtt gtt cat gag Val Ala Leu Glu Asn Ala Asn Ala Val Ser Glu Gly Val Val His Glu			303
60	65	70	
gac ctc cgc ctg ctc ttg gag acc cac ctg ccg tcc aaa aag aag aaa Asp Leu Arg Leu Leu Glu Thr His Leu Pro Ser Lys Lys Lys Lys			351
75	80	85	90
gta ctc ttg gga gtt ggg gat ccc aag att ggt gcc gca ata cag gag Val Leu Leu Gly Val Gly Asp Pro Lys Ile Gly Ala Ala Ile Gln Glu			399
95	100	105	
gag tta ggg tac aac tgc cag act gga gga gtc ata gct gag atc ctg Glu Leu Gly Tyr Asn Cys Gln Thr Gly Gly Val Ile Ala Glu Ile Leu			447
110	115	120	
cga gga gtt cgt ctg cac ttc cac aat ctg gtg aag ggt ctg acc gat Arg Gly Val Arg Leu His Phe His Asn Leu Val Lys Gly Leu Thr Asp			495
125	130	135	
ctg tca gct tgt aaa gca cag ctg ggg ctg gga cac agc tat tcc cgt Leu Ser Ala Cys Lys Ala Gln Leu Gly Leu Gly His Ser Tyr Ser Arg			543
140	145	150	
gcc aaa gtt aag ttt aat gtg aac cgg gtg gac aat atg atc atc cag Ala Lys Val Lys Phe Asn Val Asn Arg Val Asp Asn Met Ile Ile Gln			591
155	160	165	170
tcc att agc ctc ctg gac cag ctg gat aag gac atc aat acc ttc tct Ser Ile Ser Leu Leu Asp Gln Leu Asp Lys Asp Ile Asn Thr Phe Ser			639
175	180	185	
atg cgt gtc agg gag tgg tac ggg tat cac ttt ccg gag ctg gtg aag Met Arg Val Arg Glu Trp Tyr Gly Tyr His Phe Pro Glu Leu Val Lys			687
190	195	200	
atc atc aac gac aat gcc aca tac tgc cgt ctt gcc cag ttt att gga Ile Ile Asn Asp Asn Ala Thr Tyr Cys Arg Leu Ala Gln Phe Ile Gly			735
205	210	215	
aac cga agg gaa ctg aat gag gac aag ctg gag aag ctg gag gag ctg Asn Arg Arg Glu Leu Asn Glu Asp Lys Leu Glu Lys Leu Glu Glu Leu			783
220	225	230	
aca atg gat ggg gcc aag gct aag gct att ctg gat gcc tca cgg tcc Thr Met Asp Gly Ala Lys Ala Lys Ala Ile Leu Asp Ala Ser Arg Ser			831
235	240	245	250
tcc atg ggc atg gac ata tct gcc att gac ttg ata aac atc gag agc Ser Met Gly Met Asp Ile Ser Ala Ile Asp Leu Ile Asn Ile Glu Ser			879
255	260	265	
ttc tcc agt cgt gtg gtg tct tta tct gaa tac cgc cag agc cta cac Phe Ser Ser Arg Val Val Ser Leu Ser Glu Tyr Arg Gln Ser Leu His			927
270	275	280	
act tac ctg cgc tcc aag atg agc caa gta gcc ccc agc ctg tca gcc Thr Tyr Leu Arg Ser Lys Met Ser Gln Val Ala Pro Ser Leu Ser Ala			975

285	290	295	
ctt att ggg gaa gcg gta ggt gca cgt ctc atc gca cat gct ggc agc Leu Ile Gly Glu Ala Val Gly Ala Arg Leu Ile Ala His Ala Gly Ser 300	305	310	1023
ctc acc aac ctg gcc aag tat cca gca tcc aca gtg cag atc ctt ggg Leu Thr Asn Leu Ala Lys Tyr Pro Ala Ser Thr Val Gln Ile Leu Gly 315	320	325	1071
gct gaa aag gcc ctg ttc aga gcc ctg aag aca agg ggt aac act cca Ala Glu Lys Ala Leu Phe Arg Ala Leu Lys Thr Arg Gly Asn Thr Pro 335	340	345	1119
aaa tat gga ctc att ttc cac tcc acc ttc att ggc cga gca gct gcc Lys Tyr Gly Leu Ile Phe His Ser Thr Phe Ile Gly Arg Ala Ala Ala 350	355	360	1167
aag aac aaa ggc cgc atc tcc cga tac ctg gca aac aaa tgc agt att Lys Asn Lys Gly Arg Ile Ser Arg Tyr Leu Ala Asn Lys Cys Ser Ile 365	370	375	1215
gcc tca cga atc gat tgc ttc tct gag gtg ccc acg agt gta ttc ggg Ala Ser Arg Ile Asp Cys Phe Ser Glu Val Pro Thr Ser Val Phe Gly 380	385	390	1263
gag aag ctt cga gaa caa gtt gaa gag cga ctg tcc ttc tat gag act Glu Lys Leu Arg Glu Gln Val Glu Glu Arg Leu Ser Phe Tyr Glu Thr 395	400	405	1311
gga gag ata cca cga aag aat ctg gat gtc atg aag gaa gca atg gtt Gly Glu Ile Pro Arg Lys Asn Leu Asp Val Met Lys Glu Ala Met Val 415	420	425	1359
cag gca gag gca gag gaa gcg gct gct gag att act agg aag ctg gag Gln Ala Glu Ala Glu Ala Ala Glu Ile Thr Arg Lys Leu Glu 430	435	440	1407
aaa cag gag aag aaa cgc tta aag aag gaa aag aaa cgg ctg gct gca Lys Gln Glu Lys Lys Arg Leu Lys Glu Lys Lys Arg Leu Ala Ala 445	450	455	1455
ctt gcc ctc gcg tct tca gaa aac agc agt agt act cca gag gag tgt Leu Ala Leu Ala Ser Ser Glu Asn Ser Ser Thr Pro Glu Glu Cys 460	465	470	1503
gag gag atg agt gaa aaa ccc aaa aag aag aaa aag caa aag ccc cag Glu Glu Met Ser Glu Lys Pro Lys Lys Lys Lys Gln Lys Pro Gln 475	480	485	1551
gag gtt cct cag gag aat gga atg gaa gac cca tct atc tct ttc tcc Glu Val Pro Gln Glu Asn Gly Met Glu Asp Pro Ser Ile Ser Phe Ser 495	500	505	1599
aaa ccc aag aaa aag aaa tct ttt tcc aag gag gag ttg atg agt agc Lys Pro Lys Lys Lys Ser Phe Ser Lys Glu Glu Leu Met Ser Ser 510	515	520	1647
gat ctt gaa gag acc gct ggc agc acc agt att ccc aag agg aag aag Asp Leu Glu Glu Thr Ala Gly Ser Thr Ser Ile Pro Lys Arg Lys Lys 525	530	535	1695
tct aca ccc aag gag gaa aca gtt aat gac cct gag gag gca ggc cac Ser Thr Pro Lys Glu Glu Thr Val Asn Asp Pro Glu Glu Ala Gly His			1743

540	545	550	
aga agt ggc tcc aag aaa aag agg aaa ttc tcc aaa gag gag ccg gtc Arg Ser Gly Ser Lys Lys Lys Arg Lys Phe Ser Lys Glu Glu Pro Val			1791
555	560	565	570
agc agt ggg cct gaa gag gcg gct ggc aag agc agc tcc aag aag aag Ser Ser Gly Pro Glu Glu Ala Ala Gly Lys Ser Ser Ser Lys Lys Lys			1839
575	580	585	
aaa aag ttc cat aaa gca tcc cag gaa gat tag aatgcaaa tggacattct Lys Lys Phe His Lys Ala Ser Gln Glu Asp *			1890
590	595		
ctgggagggtg gggcatacca tagcccaagg tgacattcc caccctgtgc cgtgttcccc			1950
aataaaaaaca aattcacaag nnnnnnnnnn nnnnnnnnnng gggggggccgt			2000

<210> 622  
<211> 3228  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (339)..(2033)

<400> 622 gtttcattca tttgtttccc caatagatac taagtattta ctttgatcca aacacgtgc caggtactgg ggatacgtatg gttgattcga tagatctggg tcctgcctc agtgcgtata ctgctccca ctttcgttga tgtggtagtg gtgtactg agccaaccac ctaatgtgga aatgagagga cagcaagatt gtgggtatgg aatggggcaa agcaataagg gaaaatttagt gtggcagggt tcagtagcgc agcctgggtt cccatttccc cccatattca aatgctgaca ctctcttctc ctcccagggtc cagcctgtgg tgtccaca atg ccc cag gcc tct Met Pro Gln Ala Ser	60 120 180 240 300 353 1 5
gag cac cgc ctg ggc cgt acc cga gag cca cct gtt aat atc cag ccc Glu His Arg Leu Gly Arg Thr Arg Glu Pro Pro Val Asn Ile Gln Pro	401 10 15 20
cga gtg gga tcc aag cta cca ttt gcc ccc agg gcc cgc agc aag gag Arg Val Gly Ser Lys Leu Pro Phe Ala Pro Arg Ala Arg Ser Lys Glu	449 25 30 35
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Ser Phe His Met Ile Ser Ala Arg Ser Ser Glu Pro Phe Tyr Ser Asp	
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gaa aga gac ctt tca aat gta tct aac ata cat tcc agt ttt gca act Glu Arg Asp Leu Ser Asn Val Ser Asn Ile His Ser Ser Phe Ala Thr 45	50	55	674
tct cca act gga gct tca aac agc aag tat gtt tca gct gat aga aat Ser Pro Thr Gly Ala Ser Asn Ser Lys Tyr Val Ser Ala Asp Arg Asn 65	70	75	722
ctc atc aag aat act gcc cca gtg aac act gta atg gac agt cca gtg Leu Ile Lys Asn Thr Ala Pro Val Asn Thr Val Met Asp Ser Pro Val 80	85	90	770
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365	370	375	380
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Leu Ser Ser Leu Glu Asn His Ser Gln Gln Ser Thr Gln Pro Glu Met			
385	390	395	
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His Lys Tyr Gly Gln Leu Val Lys Val Glu Leu Glu Glu Asn Ala Glu			
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Asp Asp Lys Thr Glu Asn Gln Ile Pro Gln Arg Met Thr Arg Asn Lys			
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Leu Leu Ser Glu Lys Asp Ser Glu Ser Ser Pro Arg Gly Arg Ile			
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Arg Leu Thr Glu Asp Asp Pro Gln Ile His His Pro Arg Lys Arg			
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Lys Val Ser Arg Val Pro Gln Pro Val Gln Val Ser Pro Ser Leu Leu			
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575	580	585	
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g atg act cag gga aca gag gac cta aag ggc cca gga caa agg tgt	706
Met Thr Gln Gly Thr Glu Asp Leu Lys Gly Pro Gly Gln Arg Cys	
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Glu Asn Glu Pro Leu Leu Asp Pro Val Gly Pro Glu Pro Leu Gly Pro	
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cag gag atc aca gac aac ctg acg aag aag gag att cag ata gag aag Gln Glu Ile Thr Asp Asn Leu Thr Lys Lys Glu Ile Gln Ile Glu Lys 100 105 110	994
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gac ctt gcc cac gtg gta gag atc tat gac ttt gaa cca gcg ctc aag Asp Leu Ala His Val Val Glu Ile Tyr Asp Phe Glu Pro Ala Leu Lys 130 135 140	1090
acg gag gac ctg ctg gca acg ttt tct gag ttc caa gag aag ggg ttc Thr Glu Asp Leu Leu Ala Thr Phe Ser Glu Phe Gln Glu Lys Gly Phe 145 150 155	1138
agg att cag tgg gtg gat gat act cac gca ctc ggc atc ttt ccc tgc Arg Ile Gln Trp Val Asp Asp Thr His Ala Leu Gly Ile Phe Pro Cys 160 165 170 175	1186
ctg gcc tca gct gcg gaa gcc ctg acc cgg gag ttc tcg gtg ctc aag Leu Ala Ser Ala Ala Glu Ala Leu Thr Arg Glu Phe Ser Val Leu Lys 180 185 190	1234
atc cgg ccc ctc aca cag gga acc aag cag tca aag ctc aaa gcc ttg Ile Arg Pro Leu Thr Gln Gly Thr Lys Gln Ser Lys Leu Lys Ala Leu 195 200 205	1282
cag agg cca aaa ctc ctg cgt ctg gtg aag gag agg cca cag aca aat Gln Arg Pro Lys Leu Leu Arg Leu Val Lys Glu Arg Pro Gln Thr Asn 210 215 220	1330
gcg act gtg gcc cgg cgg ctg gtg gcc cgg ccc ctg gga ctc caa cac Ala Thr Val Ala Arg Arg Leu Val Ala Arg Ala Leu Gly Leu Gln His 225 230 235	1378
aaa aag aaa gag cgg cct gct gtc cgg gga tcc gtg ccg ccc tga ggc Lys Lys Lys Glu Arg Pro Ala Val Arg Gly Ser Val Pro Pro *	1426
240 245 250	
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 Met Gly  
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cca ttg caa ttt aga gat gtg gcc ata gaa ttc tct ctg gag gag tgg 283  
 Pro Leu Gln Phe Arg Asp Val Ala Ile Glu Phe Ser Leu Glu Glu Trp  
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cat tgc ctg gac act gca cag cgg aat cta tat agg aat gtg atg tta 331  
 His Cys Leu Asp Thr Ala Gln Arg Asn Leu Tyr Arg Asn Val Met Leu  
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gag aac tac agt aac ctg gtc ttc ctt ggt att gtt gtc tct aag cca 379  
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gac ctg atc gcc cat ctg gag caa gga aaa aaa cct ttg act atg aag 427  
 Asp Leu Ile Ala His Leu Glu Gln Gly Lys Pro Leu Thr Met Lys  
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aga cat gag atg gta gcc aac ccc tca ggg cca gtt ata tgt tct cat 475  
 Arg His Glu Met Val Ala Asn Pro Ser Gly Pro Val Ile Cys Ser His  
 70 75 80

ttt gcc caa gat ctt tgg cca gag cag aac ata aaa gat tct ttc caa 523  
 Phe Ala Gln Asp Leu Trp Pro Glu Gin Asn Ile Lys Asp Ser Phe Gln  
 85 90 95

aaa gtg ata ctg aga aga tat gaa aaa cgt gga cat gga aat tta cag 571  
 Lys Val Ile Leu Arg Arg Tyr Glu Lys Arg Gly His Gly Asn Leu Gln  
 100 105 110

tta ata aaa agg tgt gaa agt gta gat gag tgt aag gtg cac aca gga 619  
 Leu Ile Lys Arg Cys Glu Ser Val Asp Glu Cys Lys Val His Thr Gly  
 115 120 125 130

ggt tat aat gga ctt aac cag tgt agt aca act acc cag agc aaa gta 667  
 Gly Tyr Asn Gly Leu Asn Gln Cys Ser Thr Thr Gln Ser Lys Val  
 135 140 145

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 Phe Gln Cys Asp Lys Tyr Gly Lys Val Phe His Lys Phe Ser Asn Ser  
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aat aga cat aat ata aga cat act gaa aaa aaa cct ttc aaa tgc ata Asn Arg His Asn Ile Arg His Thr Glu Lys Lys Pro Phe Lys Cys Ile 165 170 175	763
gaa tgt ggc aaa gct ttt aac cag ttc tca acc ctt ata aca cat aag Glu Cys Gly Lys Ala Phe Asn Gln Phe Ser Thr Leu Ile Thr His Lys 180 185 190	811
aaa att cat act gga gag aaa ccc tac att tgt gaa gaa tgt ggc aaa Lys Ile His Thr Gly Glu Lys Pro Tyr Ile Cys Glu Glu Cys Gly Lys 195 200 205 210	859
gcc ttt aag tac tcc tct gcc ctt aat aca cat aag aga att cat act Ala Phe Lys Tyr Ser Ser Ala Leu Asn Thr His Lys Arg Ile His Thr 215 220 225	907
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tcc tca acc ctt agt aaa cat gag atc att cat act gga aag aaa ccc Ser Ser Thr Leu Ser Lys His Glu Ile Ile His Thr Gly Lys Lys Pro 245 250 255	1003
tac aag tgt gaa gaa tgt ggc aaa gct ttt aac caa tcc tcg aca ctt Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Asn Gln Ser Ser Thr Leu 260 265 270	1051
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gaa tgt ggc aaa gct ttt aac caa tcc tca aca ctt act aaa cat aag Glu Cys Gly Lys Ala Phe Asn Gln Ser Ser Thr Leu Thr Lys His Lys 295 300 305	1147
aaa att cat act gga gag aag ccc tac gtt tgt gaa gaa tgt ggc aaa Lys Ile His Thr Gly Glu Lys Pro Tyr Val Cys Glu Glu Cys Gly Lys 310 315 320	1195
gcc ttt aag tac tcc cgt atc ctt act aca cat aag aga att cat act Ala Phe Lys Tyr Ser Arg Ile Leu Thr Thr His Lys Arg Ile His Thr 325 330 335	1243
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tac aaa tgt gaa gaa tgt ggc aaa gcc ttc att tgg tcc tca gtc cta Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Ile Trp Ser Ser Val Leu 375 380 385	1387
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aga agt cat act gga gag aaa ccc tac aaa tgt gaa gaa tgt ggc aaa Arg Ser His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys 420 425 430	1531
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gga aag aaa ccc tac aag tgt gaa gaa tgt ggc aaa gct ttt aac cag Gly Lys Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Asn Gln 455 460 465	1627
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tac aaa tgt gaa gaa tgt ggc aaa gct ttt aac cag tcc tct tcc ctt Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Asn Gln Ser Ser Ser Leu 485 490 495	1723
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gct ttt cac cta tcc aca cac ctt act aca cat aag ata ctt cat act Ala Phe His Leu Ser Thr His Leu Thr Thr His Lys Ile Leu His Thr 550 555 560	1915
gga gag aaa cct tat aga tgt aga gaa tgt ggc aaa gct ttt aac cat Gly Glu Lys Pro Tyr Arg Cys Arg Glu Cys Gly Lys Ala Phe Asn His 565 570 575	1963
tct gca acc ctt tct tca cat aag aaa atc cat tct gga gag aaa cca Ser Ala Thr Leu Ser Ser His Lys Lys Ile His Ser Gly Glu Lys Pro 580 585 590	2011
tac gag tgt gat aaa tgt ggc aaa gcc ttt att tca ccc tca agc ctt Tyr Glu Cys Asp Lys Cys Gly Lys Ala Phe Ile Ser Pro Ser Ser Leu 595 600 605 610	2059
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2496

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 180  
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 240  
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 Met Phe Pro Arg Val Ser Thr Phe Leu Pro Leu  
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 Arg Pro Leu Ser Arg His Pro Leu Ser Ser Gly Ser Pro Glu Thr Ser  
 15 20 25  
  
 gcg gct gcg att atg cta ctc act gtt cgg cac gga aca gtc agg tac 448  
 Ala Ala Ala Ile Met Leu Leu Thr Val Arg His Gly Thr Val Arg Tyr  
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 Arg Ser Ser Ala Leu Leu Ala Arg Thr Lys Asn Asn Ile Gln Arg Tyr  
 45 50 55  
  
 ttt ggc act aac agt gtg atc tgt agc aag aaa gat aag cag tct gtt 544  
 Phe Gly Thr Asn Ser Val Ile Cys Ser Lys Lys Asp Lys Gln Ser Val  
 60 65 70 75  
  
 cga act gag gag act tcc aag gag act tca gag agc caa gac agt gaa 592  
 Arg Thr Glu Thr Ser Lys Glu Thr Ser Glu Ser Gln Asp Ser Glu  
 80 85 90  
  
 aag gaa aat acg aaa aaa gac ttg tta ggc att att aag ggc atg aaa 640  
 Lys Glu Asn Thr Lys Lys Asp Leu Leu Gly Ile Ile Lys Gly Met Lys  
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 Val Glu Leu Ser Thr Val Asn Val Arg Thr Thr Lys Pro Pro Lys Arg  
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 125 130 135  
  
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 Thr Glu Tyr Ala Pro Lys Lys Arg Ile Glu Pro Leu Ser Pro Glu Leu  
 140 145 150 155

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aca ggg aaa aga ctt aat att ttt gac atg atg gca gtt act aaa gaa Thr Gly Lys Arg Leu Asn Ile Phe Asp Met Met Ala Val Thr Lys Glu 255 260 265	1120
gca cct gaa aca gac aca tca cct tca ctt tgg gat gtg gaa ttt gct Ala Pro Glu Thr Asp Thr Ser Pro Ser Leu Trp Asp Val Glu Phe Ala 270 275 280	1168
aag cag tta gcc aca gta aat gaa caa ccc ctt cag aat gga ttt gaa Lys Gln Leu Ala Thr Val Asn Glu Gln Pro Leu Gln Asn Gly Phe Glu 285 290 295	1216
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aac aat gaa gca ggt ttt gat gat gat ggt tca gaa ttt cat gaa cat Asn Asn Glu Ala Gly Phe Asp Asp Asp Gly Ser Glu Phe His Glu His 320 325 330	1312
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Ala Ala Ala Ile Met Leu Leu Thr Val Arg His Gly Thr Val Arg Thr		
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aaa aat aac atc caa aga tat ttt ggc act aac agt gtg atc tgt agc	496	
Lys Asn Asn Ile Gln Arg Tyr Phe Gly Thr Asn Ser Val Ile Cys Ser		
45	50	55

aag aaa gat aag cag tct gtt cga act gag gag act tcc aag gag act	544		
Lys Lys Asp Lys Gln Ser Val Arg Thr Glu Glu Thr Ser Lys Glu Thr			
60	65	70	75

tca gag agc caa gac agt gaa aag gaa aat acg aaa aaa gac ttg tta	592	
Ser Glu Ser Gln Asp Ser Glu Lys Glu Asn Thr Lys Lys Asp Leu Leu		
80	85	90

ggc att att aag ggc atg aaa gtt gaa tta agc aca gta aat gta cga	640	
Gly Ile Ile Lys Gly Met Lys Val Glu Leu Ser Thr Val Asn Val Arg		
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aaa cta tgg gag ttc cca att aac aat gaa gca ggt ttt gat gat gat Lys Leu Trp Glu Phe Pro Ile Asn Asn Glu Ala Gly Phe Asp Asp Asp 300 305 310 315	1264
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Ile Glu Trp Phe Arg Asn Tyr Phe Asn Glu Lys Lys Asp Ile Leu Lys			
365	370	375	
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Glu Ser Asn Ile Gln Phe Asn *			
380	385		
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<400> 528

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gcgccttatt ctaggcactt gttgggcaga	atg tca cac ctg ccg atg aaa Met Ser His Leu Pro Met Lys	231
	1 5	

ctc ctg cgt aag aag atc gag aag cg<sub>g</sub> aac ctc aaa ttg cg<sub>g</sub> cag cg<sub>g</sub> 279  
 Leu Leu Arg Lys Lys Ile Glu Lys Arg Asn Leu Lys Leu Arg Gln Arg  
     10                15                20

aac cta aag ttt cag ggg gcc tca aat ctg acc cta tcg gaa actcaa 327  
Asn Leu Lys Phe Gln Gly Ala Ser Asn Leu Thr Leu Ser Glu Thr Gln  
25 30 35

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aat gga gat gta tct gaa gaa aca atg gga agt aga aag gtt aaa aaa      375
Asn Gly Asp Val Ser Glu Glu Thr Met Gly Ser Arg Lys Val Lys Lys
   40          45          50          55

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tca aaa caa aag ccc atg aat gtg ggc tta tca gaa actcaa aat gga 423  
Ser Lys Lys Pro Met Asn Val Gly Leu Ser Glu Thr Gln Asn Gly  
60 65 70

ggc atg tct caa gaa qca qtq qqa aat ata aaa gtt aca aag tct ccc 471

Gly Met Ser Gln Glu Ala Val Gly Asn Ile Lys Val Thr Lys Ser Pro			
75	80	85	
cag aaa tcc act gta tta agc aat gga gaa gca gca atg cag tct tcc		519	
Gln Lys Ser Thr Val Leu Ser Asn Gly Glu Ala Ala Met Gln Ser Ser			
90	95	100	
aat tca gaa tca aaa aag aaa aag aag aaa aag aca aaa atg gtg aat		567	
Asn Ser Glu Ser Lys Lys Lys Lys Lys Arg Lys Met Val Asn			
105	110	115	
gat gct gag cct gat acg aaa aaa gca aaa act gaa aac aaa ggg aaa		615	
Asp Ala Glu Pro Asp Thr Lys Lys Ala Lys Thr Glu Asn Lys Gly Lys			
120	125	130	135
tct gaa gaa gaa agt gcc gag act act aaa gaa aca gaa aat aat gtg		663	
Ser Glu Glu Ser Ala Glu Thr Thr Lys Glu Thr Glu Asn Asn Val			
140	145	150	
gag aag cca gat aat gat gaa gat gag agt gag gtg ccc agt ctg ccc		711	
Glu Lys Pro Asp Asn Asp Glu Asp Glu Ser Glu Val Pro Ser Leu Pro			
155	160	165	
ctg gga ctg aca gga gct ttt gag gat act tcg ttt gct tct cta tgt		759	
Leu Gly Leu Thr Gly Ala Phe Glu Asp Thr Ser Phe Ala Ser Leu Cys			
170	175	180	
aat ctt gtc aat gaa aac act ctg aag gca ata aaa gaa atg ggt ttt		807	
Asn Leu Val Asn Glu Asn Thr Leu Lys Ala Ile Lys Glu Met Gly Phe			
185	190	195	
aca aac atg act gaa att cag cat aaa agt atc aga cca ctt ctg gaa		855	
Thr Asn Met Thr Glu Ile Gln His Lys Ser Ile Arg Pro Leu Leu Glu			
200	205	210	215
ggc agg gat ctt cta gca gct gca aaa aca ggc agt ggt aaa acc ctg		903	
Gly Arg Asp Leu Leu Ala Ala Lys Thr Gly Ser Gly Lys Thr Leu			
220	225	230	
gct ttt ctc atc cct gca gtt gaa ctc att gtt aag tta agg ttc atg		951	
Ala Phe Leu Ile Pro Ala Val Glu Leu Ile Val Lys Leu Arg Phe Met			
235	240	245	
ccc agg aat gga aca gga gtc ctt att ctc tca cct act aga gaa cta		999	
Pro Arg Asn Gly Thr Gly Val Leu Ile Leu Ser Pro Thr Arg Glu Leu			
250	255	260	
gcc atg caa acc ttt ggt gtt ctt aag gag ctg atg act cac cac gtg		1047	
Ala Met Gln Thr Phe Gly Val Leu Lys Glu Leu Met Thr His His Val			
265	270	275	
cat acc tat ggc ttg ata atg ggt ggc agt aac aga tct gct gaa gca		1095	
His Thr Tyr Gly Leu Ile Met Gly Gly Ser Asn Arg Ser Ala Glu Ala			
280	285	290	295
cag aaa ctt ggt aat ggg atc aac atc att gtg gcc aca cca ggc cgt		1143	
Gln Lys Leu Gly Asn Gly Ile Asn Ile Ile Val Ala Thr Pro Gly Arg			
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ctg ctg gac cat atg cag aat acc cca gga ttt atg tat aaa aac ctg		1191	
Leu Leu Asp His Met Gln Asn Thr Pro Gly Phe Met Tyr Lys Asn Leu			
315	320	325	
cag tgt ctg gtt att gat gaa gct gat cgt atc ttg gat gtg ggg ttt		1239	

Gln Cys Leu Val Ile Asp Glu Ala Asp Arg Ile Leu Asp Val Gly Phe				
330	335	340		
gaa gag gaa tta aag caa att att aaa ctt ttg cca aca cgt aga cag				1287
Glu Glu Leu Lys Gln Ile Ile Lys Leu Leu Pro Thr Arg Arg Gln				
345	350	355		
act atg ctc ttt tct gcc acc caa act cga aaa gtt gaa gac ctg gca				1335
Thr Met Leu Phe Ser Ala Thr Gln Thr Arg Lys Val Glu Asp Leu Ala				
360	365	370	375	
agg att tct ctg aaa aag gag cca ttg tat gtt ggc gtt gat gat gat				1383
Arg Ile Ser Leu Lys Lys Glu Pro Leu Tyr Val Gly Val Asp Asp Asp				
380	385	390		
aaa gcg aat gca aca gtg gat ggt ctt gaa cag gga tat gtt gtt tgt				1431
Lys Ala Asn Ala Thr Val Asp Gly Leu Glu Gln Gly Tyr Val Val Cys				
395	400	405		
cct tct gaa aag aga ttc ctt ctg ctc ttt aca ttc ctt aag aag aac				1479
Pro Ser Glu Lys Arg Phe Leu Leu Phe Thr Phe Leu Lys Lys Asn				
410	415	420		
cga aag aag aag ctt atg gtc ttc ttt tca tct tgt atg tct gtg aaa				1527
Arg Lys Lys Lys Leu Met Val Phe Phe Ser Ser Cys Met Ser Val Lys				
425	430	435		
tac cac tat gag ttg ctg aac tac att gat ttg ccc gtc ttg gcc att				1575
Tyr His Tyr Glu Leu Leu Asn Tyr Ile Asp Leu Pro Val Leu Ala Ile				
440	445	450	455	
cat gga aag caa aag caa aat aag cgt aca acc aca ttc ttc cag ttc				1623
His Gly Lys Gln Lys Gln Asn Lys Arg Thr Thr Phe Phe Gln Phe				
460	465	470		
tgc aat gca gat tcg gga aca cta ttg tgt acg gat gtg gca gcg aga				1671
Cys Asn Ala Asp Ser Gly Thr Leu Leu Cys Thr Asp Val Ala Ala Arg				
475	480	485		
gga cta gac att cct gaa gtc gac tgg att gtt cag tat gac cct ccg				1719
Gly Leu Asp Ile Pro Glu Val Asp Trp Ile Val Gln Tyr Asp Pro Pro				
490	495	500		
gat gac cct aag gaa tat att cat cgt gtg ggt aga aca gcc aga ggc				1767
Asp Asp Pro Lys Glu Tyr Ile His Arg Val Gly Arg Thr Ala Arg Gly				
505	510	515		
cta aat ggg aga ggg cat gcc ttg ctc att ttg cgc cca gaa gaa ttg				1815
Leu Asn Gly Arg Gly His Ala Leu Leu Ile Leu Arg Pro Glu Glu Leu				
520	525	530	535	
ggt ttt ctt cgt tac ttg aaa caa tcc aag gtt cca tta agt gaa ttt				1863
Gly Phe Leu Arg Tyr Leu Lys Gln Ser Lys Val Pro Leu Ser Glu Phe				
540	545	550		
gac ttt tcc tgg tct aaa att tct gac att cag tct cag ctt gag aaa				1911
Asp Phe Ser Trp Ser Lys Ile Ser Asp Ile Gln Ser Gln Leu Glu Lys				
555	560	565		
ttg att gaa aag aat tac ttt ctt cat aag tca gcc cag gaa gca tat				1959
Leu Ile Glu Lys Asn Tyr Phe Leu His Lys Ser Ala Gln Glu Ala Tyr				
570	575	580		
aag tca tac ata cga gcc tat gat tcc cat tct ctg aaa cag atc ttt				2007

Lys Ser Tyr Ile Arg Ala Tyr Asp Ser His Ser Leu Lys Gln Ile Phe			
585	590	595	
aat gtt aat aac cta aat ttg cct cag gtt gct ctg tca ttt ggt ttc		2055	
Asn Val Asn Asn Leu Asn Leu Pro Gln Val Ala Leu Ser Phe Gly Phe			
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aag gtg cct ccc ttc gtt gat ctg aac gtc aac agt aat gaa ggc aag		2103	
Lys Val Pro Pro Phe Val Asp Leu Asn Val Asn Ser Asn Glu Gly Lys			
620	625	630	
cag aaa aag cga gga ggt ggt gga ttt ggc tac cag aaa acc aag		2151	
Gln Lys Lys Arg Gly Gly Gly Phe Gly Tyr Gln Lys Thr Lys			
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Lys Val Glu Lys Ser Lys Ile Phe Lys His Ile Ser Lys Lys Ser Ser			
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Asp Ser Arg Gln Phe Ser His *			
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gatagtacat ttgttagcag ttcaaagcca aagttgctag catcattttt ctgttgtgc		3033	
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<400> 629

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cagtttacat	atattcttga	taacctctcc	aacttt	atg	tct	cac	cac	ccc	174	
				Met	Ser	His	His	Pro	His	
				1		5				
tca	ctt	cgt	aat	tcg	tgc	ctt	atc	aga	629	
Ser	Leu	Arg	Asn	Ser	Cys	Leu	Ile	Arg	222	
	10				15			20		
ttc	acc	ata	tat	acc	att	aca	ttt	tgt	ttc	270
Phe	Thr	Ile	Tyr	Thr	Ile	Thr	Phe	Cys	Phe	
	25				30			35		
ctt	aca	ctt	tcg	gcc	cag	cac	atc	agt	cat	318
Leu	Thr	Leu	Ser	Ala	Gln	Ile	Ser	His	Arg	
	40				45			50		
tat	tca	ctc	ctg	ttc	tgg	aag	gtg	cac	cac	366
Tyr	Ser	Leu	Leu	Phe	Trp	Lys	Val	His	His	
	55				60			65		
cct	tgc	tct	ccc	agg	cta	gat	gag	atg	tcc	414
Pro	Cys	Ser	Pro	Arg	Leu	Asp	Glu	Met	Ser	
	75				80			85		
cac	cct	gtg	cat	gta	tct	gtt	gtg	cac	tta	462
His	Pro	Val	His	Val	Val	Val	His	Leu	Pro	
	90				95			100		
tct	atg	acc	caa	gtc	tct	ccc	cac	tag	cttgt	514
Ser	Met	Thr	Gln	Val	Ser	Pro	His	*	aagctcctca	
	105				110					
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tgaaaaatgt	ttagtgttca	aatagaaaacc	attcgtgtcc	cttcactctc	tgaacatagt					934

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taccagggttg ttatctgtct attacagccc cttcaattct gggctccctgg ccctttgcga	1114
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caatactgtg ctggctccag tgggattcct ctctgcaaaag ctgctggcctt agcttgcactg	1414
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gtgttcctat cccaggatgg ctgttggat taggagtgaa atgaggaata gtttaggacc	1654
acaagagatt tggccctcatt ggaacatgtaa ggaaggcctc aaggatgtaa ttctageccca	1714
ggaaagaaaa tccctttcag cagacgcttc cttcccttc ccctaggaa tgtgtcccta	1774
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<222> (37) .. (963)

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Val Leu Ser Ser Leu Ala Val Tyr Ala Glu Asp Ser Glu Pro Glu Ser		
10	15	20
gat ggc gag gct gga atc gag gcg gtg ggc agc gcg gct gag gag aaa		150
Asp Gly Ala Gly Ile Glu Ala Val Gly Ser Ala Ala Glu Glu Lys		
25	30	35
ggc gga ttg gta tct gat gcc tat ggg gag gat gac ttt tct cgt cta		198
Gly Leu Val Ser Asp Ala Tyr Gly Glu Asp Asp Phe Ser Arg Leu		
40	45	50
ggg ggt gat gaa gat ggt tat gaa gaa gaa gat gag aac agt aga		246
Gly Gly Asp Glu Asp Gly Tyr Glu Glu Glu Asp Glu Asn Ser Arg		
55	60	65
		70

cag tcg gaa gat gac gat tca gag act gaa aaa cct gag gct gat gac Gln Ser Glu Asp Asp Asp Ser Glu Thr Glu Lys Pro Glu Ala Asp Asp 75 80 85	294
cca aag gat aat aca gaa gca gaa aag cga gac ccc cag gaa ctc gtg Pro Lys Asp Asn Thr Glu Ala Glu Lys Arg Asp Pro Gln Glu Leu Val 90 95 100	342
gcc tcc ttt tct gaa aga gtt cgg aac atg tcg cct gat gaa atc aag Ala Ser Phe Ser Glu Arg Val Arg Asn Met Ser Pro Asp Glu Ile Lys 105 110 115	390
atc ccg cca gaa ccc cct ggc aga tgt tca aat cac ttg caa gac aag Ile Pro Pro Glu Pro Pro Gly Arg Cys Ser Asn His Leu Gln Asp Lys 120 125 130	438
atc cag aag ctt tat gaa cga aag ata aag gag gga atg gat atg aac Ile Gln Lys Leu Tyr Glu Arg Lys Ile Lys Glu Gly Met Asp Met Asn 135 140 145 150	486
tac att atc caa agg aag aaa gaa ttt cgg aac cct agc atc tac gag Tyr Ile Ile Gln Arg Lys Lys Glu Phe Arg Asn Pro Ser Ile Tyr Glu 155 160 165	534
aag ctg atc cag ttc tgt gcc att gac gag ctt ggc acc aac tac cca Lys Leu Ile Gln Phe Cys Ala Ile Asp Glu Leu Gly Thr Asn Tyr Pro 170 175 180	582
aag gat atg ttt gat ccc cat ggc tgg tct gag gac tcc tac tat gag Lys Asp Met Phe Asp Pro His Gly Trp Ser Glu Asp Ser Tyr Tyr Glu 185 190 195	630
gca tta gcc aag gcc cag aaa att gag atg gac aaa ttg gaa aag gcc Ala Leu Ala Lys Ala Gln Lys Ile Glu Met Asp Lys Leu Glu Lys Ala 200 205 210	678
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acc acg acc aac gcc acg tcc acc acc act acc act gcc agc aca gct Thr Thr Asn Ala Thr Ser Thr Thr Thr Ala Ser Thr Ala 235 240 245	774
gtt gca gat gct cag aag aga aag agc aag tgg gat tcg gct atc cca Val Ala Asp Ala Gln Lys Arg Lys Ser Lys Trp Asp Ser Ala Ile Pro 250 255 260	822
gtg aca acg ata gcc cag ccc acc atc ctc acc acc aca gcc acc ctg Val Thr Thr Ile Ala Gln Pro Thr Ile Leu Thr Thr Ala Thr Leu 265 270 275	870
cca gct gtt gtc acg gtc acc acc agc gcc agc ggc tcc aag acc acc Pro Ala Val Val Thr Val Thr Ser Ala Ser Gly Ser Lys Thr Thr 280 285 290	918
gtc atc tct gct gtg ggc acc att gtg aag aag gcc aag cag tga cct Val Ile Ser Ala Val Gly Thr Ile Val Lys Lys Ala Lys Gln * 295 300 305	966
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gcacatctcaga tgcactggcc tctccctgcat tctgtttgca ggcaaatgct tcagctcaca	1266
tgtcccccaa gactcaatag tcttgggttgg gactattgcc tcaggggttga caacagggtg	1326
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 Val Leu Ser Ser Leu Ala Val Tyr Ala Glu Asp Ser Glu Pro Glu Ser  
 10 15 20

gat ggc gag gct gga atc gag gcg gtg ggc agc gcg gct gag gag gag aaa 150  
 Asp Gly Glu Ala Gly Ile Glu Ala Val Gly Ser Ala Ala Glu Glu Lys  
           25                 30                 35

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ggc gga ttg gta tct gat gcc tat ggg gag gat gac ttt tct cgt cta      198
Gly Gly Leu Val Ser Asp Ala Tyr Gly Glu Asp Asp Phe Ser Arg Leu
        40          45          50

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ggg ggt gat gaa gat ggt tat gaa gaa gaa gaa gat gag aac agt aga 246  
 Gly Gly Asp Glu Asp Gly Tyr Glu Glu Glu Asp Glu Asn Ser Arg  
 55 60 65 70

cag tcg aga cgg tgt ttc act atg ttt ccc agt ctg gtt tca aac ttc 294  
 Gln Ser Arg Arg Cys Phe Thr Met Phe Pro Ser Leu Val Ser Asn Phe  
                  75                 80                 85

tgg cct caa gca att ccc ctg cct cac cct ccc aaa gtg ctg gga tta 342  
Trp Pro Gln Ala Ile Pro Leu Pro His Pro Pro Lys Val Leu Gly Leu  
90 95 100

cag gaa gat gac gat tca gag act gaa aaa cct gag gct gat gac cca 390  
 Gln Glu Asp Asp Asp Ser Glu Thr Glu Lys Pro Glu Ala Asp Asp Pro  
     105              110              115

aag gat aat aca gaa gca gaa aag cga gac ccc cag gaa ctc gtg gcc 438  
 Lys Asp Asn Thr Glu Ala Glu Lys Arg Asp Pro Gln Glu Leu Val Ala  
 120 125 130

tcc ttt tct gaa aga gtt cg<sup>g</sup> aac atg tcg cct gat gaa atc aag atc 486  
 Ser Phe Ser Glu Arg Val Arg Asn Met Ser Pro Asp Glu Ile Lys Ile

135	140	145	150	
ccg cca gaa ccc cct ggc aga tgt tca aat cac ttg caa gac aag atc Pro Pro Glu Pro Pro Gly Arg Cys Ser Asn His Leu Gln Asp Lys Ile 155		160	165	534
cag aag ctt tat gaa cga aag ata aag gag gga atg gat atg aac tac Gln Lys Leu Tyr Glu Arg Lys Ile Lys Glu Gly Met Asp Met Asn Tyr 170	175		180	582
att atc caa agg aag aaa gaa ttt cgg aac cct agc atc tac gag aag Ile Ile Gln Arg Lys Lys Glu Phe Arg Asn Pro Ser Ile Tyr Glu Lys 185	190	195		630
ctg atc cag ttc tgt gcc att gag gag ctt ggc acc aac tac cca aag Leu Ile Gln Phe Cys Ala Ile Asp Glu Leu Gly Thr Asn Tyr Pro Lys 200	205	210		678
gat atg ttt gat ccc cat ggc tgg tct gag gac tcc tac tat gag gca Asp Met Phe Asp Pro His Gly Trp Ser Glu Asp Ser Tyr Tyr Glu Ala 215	220	225	230	
tta gcc aag gcc cag aaa att gag atg gac aaa ttg gaa aag gcc aaa Leu Ala Lys Ala Gln Lys Ile Glu Met Asp Lys Leu Glu Lys Ala Lys 235	240	245		774
aag gag cga aca aaa gct tgt tgc agg gac gtg tct gca gcg cct ggg Lys Glu Arg Thr Lys Ala Cys Cys Arg Asp Val Ser Ala Ala Pro Gly 250	255	260		822
gaa ccg agc tgt cct tcc cct gtg cggt gcgc acc gcc tcc tcc tgg Glu Pro Ser Cys Pro Ser Pro Val Arg Ala Gly Thr Ala Ser Ser Trp 265	270	275		870
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tcc acc acc act acc act gcc agc aca gct gtt gca gat gct cag aag Ser Thr Thr Thr Ala Ser Thr Ala Val Ala Asp Ala Gln Lys 295	300	305	310	
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ccc acc atc ctc acc acc aca gcc acc ctg cca gct gtt gtc acg gtc Pro Thr Ile Leu Thr Thr Ala Thr Leu Pro Ala Val Val Thr Val 330	335	340		1062
acc acc agc gcc agc ggc tcc aag acc acc gtc atc tct gct gtg ggc Thr Thr Ser Ala Ser Gly Ser Lys Thr Thr Val Ile Ser Ala Val Gly 345	350	355		1110
acc att gtg aag aag gcc aag cag tga cctga ggggccaccc taggacttga Thr Ile Val Lys Lys Ala Lys Gln *	360	365		1162
aaggaccgtg cagccccagtg accactgccc agtggggaggc gccactttgt atatccagg				1222
actggggacct actccccaga tgccacctga gaggagcttc tgtttggcat tccagatgga				1282
aggacaggca gcacgggagc caggcgctgt ggacagggtc tgcacacgca ccacctgggg				1342

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tcctgcatttc tggttgagg caaatgcctc agctcacatgtcccccaaga ctcaatagtc	1462
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Met Ala Arg Gln Glu Gln Arg Gly Ser Pro	
1 5 10	
ccc ttg agg gcg gaa ggc aag gcc gac gcg gag gtt aag ctc att ctg	159
Pro Leu Arg Ala Glu Gly Lys Ala Asp Ala Glu Val Lys Leu Ile Leu	
15 20 25	
tac cat tgg acg cat tcc ttc agc tct caa aag gtg cgc ttg gta att	207
Tyr His Trp Thr His Ser Phe Ser Ser Gln Lys Val Arg Leu Val Ile	
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Ala Glu Lys Ala Leu Lys Cys Glu His Asp Val Ser Leu Pro Leu	
45 50 55 60	
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Ser Glu His Asn Glu Pro Trp Phe Met Arg Leu Asn Ser Thr Gly Glu	
65 70 75	
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Val Pro Val Leu Ile His Gly Glu Asn Ile Ile Cys Glu Ala Thr Gln	
80 85 90	
atc att gat tat ctt gaa cag act ttc ctg gat gaa aga aca ccc agg	399
Ile Ile Asp Tyr Leu Glu Gln Thr Phe Leu Asp Glu Arg Thr Pro Arg	
95 100 105	
tta atg cct gat aaa gaa agc atg tat tac cca cgg gta caa cat tac	447
Leu Met Pro Asp Lys Glu Ser Met Tyr Tyr Pro Arg Val Gln His Tyr	
110 115 120	
cga gag ctg ctt gac tcc ttg cca atg gat gcc tat aca cat ggc tgc	495
Arg Glu Leu Leu Asp Ser Leu Pro Met Asp Ala Tyr Thr His Gly Cys	
125 130 135 140	
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Ile Leu His Pro Glu Leu Thr Val Asp Ser Met Ile Pro Ala Tyr Ala	
145 150 155	
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Thr Thr Arg Ile Arg Ser Gln Ile Gly Asn Thr Glu Ser Glu Leu Lys		
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Lys Leu Ala Glu Glu Asn Pro Asp Leu Gln Glu Ala Tyr Ile Ala Lys		
175	180	185
cag aaa cga ctt aaa tca aag ctg ctt gat cat gac aat gtc aag tat		687
Gln Lys Arg Leu Lys Ser Lys Leu Leu Asp His Asp Asn Val Lys Tyr		
190	195	200
ttg aag aaa att ctt gat gag ttg gag aaa gtc ttg gat cag gtt gaa		735
Leu Lys Lys Ile Leu Asp Glu Leu Glu Lys Val Leu Asp Gln Val Glu		
205	210	215
act gaa ttg caa aga aga aat gaa gaa acc cca gaa gag ggc cag caa		783
Thr Glu Leu Gln Arg Arg Asn Glu Glu Thr Pro Glu Glu Gln Gln		
225	230	235
cct tgg ctc tgc ggt gaa tcc ttc acc ctg gca gac gtc tca ctc gct		831
Pro Trp Leu Cys Gly Glu Ser Phe Thr Leu Ala Asp Val Ser Leu Ala		
240	245	250
gtc aca ttg cat cga ctg aag ttc ctg ggg ttt gca agg aga aac tgg		879
Val Thr Leu His Arg Leu Lys Phe Leu Gly Phe Ala Arg Arg Asn Trp		
255	260	265
gga aac gga aag cga cca aac ttg gaa acc tat tac gag cgt gtc ttg		927
Gly Asn Gly Lys Arg Pro Asn Leu Glu Thr Tyr Tyr Glu Arg Val Leu		
270	275	280
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Lys Arg Lys Thr Phe Asn Lys Val Leu Gly His Val Asn Asn Ile Leu		
285	290	295
atc tct gca gtg ctg cca aca gca ttc cgg gtg gcc aag aaa agg gcc		1023
Ile Ser Ala Val Leu Pro Thr Ala Phe Arg Val Ala Lys Lys Arg Ala		
305	310	315
cca aaa gtt ctt ggc acg acc ctt gtg gtt ggt ttg ctt gca gga gtg		1071
Pro Lys Val Leu Gly Thr Thr Leu Val Val Gly Leu Leu Ala Gly Val		
320	325	330
gga tat ttt gct ttt atg ctt ttc aga aag aga ctt ggc agc atg ata		1119
Gly Tyr Phe Ala Phe Met Leu Phe Arg Lys Arg Leu Gly Ser Met Ile		
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 Pro Arg Ala Ala Arg Ala Pro Ala Thr Leu Leu Leu Ala Leu Gly Ala 15

5 10 15

gtg ctg tgg cct gcg gct ggc gcc tgg gag ctt acg att ttg cac acc 151  
 Val Leu Trp Pro Ala Ala Gly Ala Trp Glu Leu Thr Ile Leu His Thr 20 25 30

aac gac gtg cac agc cgg ctg gag cag acc gag gac tcc agc aag 199  
 Asn Asp Val His Ser Arg Leu Glu Gln Thr Ser Glu Asp Ser Ser Lys 35 40 45 50

tgc gtc aac gcc agc cgc tgc atg ggt ggc gtg gct cgg ctc ttc acc 247  
 Cys Val Asn Ala Ser Arg Cys Met Gly Gly Val Ala Arg Leu Phe Thr 55 60 65

aag gtt cag cag atc cgc cgc gcc gaa ccc aac gtg ctg ctg ctg gac 295  
 Lys Val Gln Gln Ile Arg Arg Ala Glu Pro Asn Val Leu Leu Asp 70 75 80

gcc ggc gac cag tac cag ggc act atc tgg ttc acc gtg tac aag ggc 343  
 Ala Gly Asp Gln Tyr Gln Gly Thr Ile Trp Phe Thr Val Tyr Lys Gly 85 90 95

gcc gag gtg gcg cac ttc atg aac gcc ctg cgc tac gat gcc atg gca 391  
 Ala Glu Val Ala His Phe Met Asn Ala Leu Arg Tyr Asp Ala Met Ala 100 105 110

ctg gga aat cat gaa ttt gat aat ggt gtg gaa gga ctg atc gag cca 439  
 Leu Gly Asn His Glu Phe Asp Asn Gly Val Glu Gly Leu Ile Glu Pro 115 120 125 130

ctc ctc aaa gag gcc aaa ttt cca att ctg agt gca aac att aaa gca 487  
 Leu Leu Lys Glu Ala Lys Phe Pro Ile Leu Ser Ala Asn Ile Lys Ala 135 140 145

aag ggg cca cta gca tct caa ata tca gga ctt tat ttg cca tat aaa 535  
 Lys Gly Pro Leu Ala Ser Gln Ile Ser Gly Leu Tyr Leu Pro Tyr Lys 150 155 160

gtt ctt cct gtt ggt gat gaa gtt gtg gga atc gtt gga tac act tcc 583  
 Val Leu Pro Val Gly Asp Glu Val Val Gly Ile Val Gly Tyr Thr Ser 165 170 175

aaa gaa acc cct ttt ctc tca aat cca ggg aca aat tta gtg ttt gaa 631  
 Lys Glu Thr Pro Phe Leu Ser Asn Pro Gly Thr Asn Leu Val Phe Glu 180 185 190

gat gaa atc act gca tta caa cct gaa gta gat aag tta aaa act cta 679  
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aat gtg aac aaa att att gca ctg gga cat tcg ggt ttt gaa atg gat 727  
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 Lys Leu Ile Ala Gln Lys Val Arg Gly Val Asp Val Val Val Gly Gly 230 235 240

cac tcc aac aca ttt ctt tac aca ggc aat cca cct tcc aaa gag gtg· His Ser Asn Thr Phe Leu Tyr Thr Gly Asn Pro Pro Ser Lys Glu Val 245 250 255	823
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gtt cct gta gtc cag gcc tat gct ttt ggc aaa tac cta ggc tat ctg Val Pro Val Val Gln Ala Tyr Ala Phe Gly Lys Tyr Leu Gly Tyr Leu 275 280 285 290	919
aag atc gag ttt gat gaa aga gga aac gtc atc tct tcc cat gga aat Lys Ile Glu Phe Asp Glu Arg Gly Asn Val Ile Ser Ser His Gly Asn 295 300 305	967
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gac att aac aaa tgg agg ata aaa ttg gat aat tat tct acc cag gaa Asp Ile Asn Lys Trp Arg Ile Lys Leu Asp Asn Tyr Ser Thr Gln Glu 325 330 335	1063
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ggc aca ttt gac cta gtc cag tta aaa ggt tcc acc ctg aag aag gcc Gly Thr Phe Asp Leu Val Gln Leu Lys Gly Ser Thr Leu Lys Lys Ala 420 425 430	1351
ttt gag cat agc gtg cac cgc tac ggc cag tcc act gga gag ttc ctg Phe Glu His Ser Val His Arg Tyr Gly Gln Ser Thr Gly Glu Phe Leu 435 440 445 450	1399
cag gtg ggc gga atc cat gtg gtg tat gat ctt tcc cga aaa cct gga Gln Val Gly Gly Ile His Val Val Tyr Asp Leu Ser Arg Lys Pro Gly 455 460 465	1447
gac aga gta gtc aaa tta gat gtt ctt tgc acc aag tgt cga gtg ccc Asp Arg Val Val Lys Leu Asp Val Leu Cys Thr Lys Cys Arg Val Pro 470 475 480	1495
agt tat gac cct ctc aaa atg gac gag gta tat aag gtg atc ctc cca Ser Tyr Asp Pro Leu Lys Met Asp Glu Val Tyr Lys Val Ile Leu Pro 485 490 495	1543

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	1				5					10						
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Ser	Gly	Lys	Thr	Gly	Glu	Gln	Glu	Gly	Ser	Leu	Ser	Thr	Leu	Phe	Ser	
15					20					25						
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Arg	Leu	Tyr	Ala	Phe	Val	Met	Ser	Val	Ile	Ser	Asp	Asp	Arg	Phe	Glu	
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Asp	Leu	Glu	Glu	Ala	Asn	Pro	Phe	Ser	Phe	Arg	Glu	Phe	Leu	Lys	Thr	
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Lys	Asn	Leu	Gly	Leu	Ser	Lys	Glu	Asp	Pro	Ala	Ser	Arg	Ile	Tyr	Ala	
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Lys	Glu	Ala	Ser	Arg	His	Ser	Leu	Gly	Leu	Asp	His	Asn	Ser	Pro	Pro	
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Ser	Gln	Thr	Gly	Gly	Tyr	Gly	Leu	Glu	Tyr	Gln	Gln	Pro	Phe	Phe	Glu	
95					100				105							

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ccg cct gcc agg ctg tcg ggc gtc atg gtg ccg gcg ccc atc caa gac      280
Pro Pro Ala Arg Leu Ser Gly Val Met Val Pro Ala Pro Ile Gln Asp
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ctg gag gcc ctg cgc gcg ctc acg gcg ctc ttc aaa gag cag cgg aac 328  
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40 45 50	
aag aaa tct tct cat gct gtt gag ctt gcc tgc aga gat cca tcc caa Lys Lys Ser Ser His Ala Val Glu Leu Ala Cys Arg Asp Pro Ser Gln	424
55 60 65 70	
gtg gaa aac ctg gct tcc agt ctg cag tta ata aca gaa tgc ttc agg Val Glu Asn Leu Ala Ser Ser Leu Gln Leu Ile Thr Glu Cys Phe Arg	472
75 80 85	
tgt ctt cgc aat gct tgc ata gag tgt tct gtg aac cag aat tca atc Cys Leu Arg Asn Ala Cys Ile Glu Cys Ser Val Asn Gln Asn Ser Ile	520
90 95 100	
agg aac ttg gat acg att ggt gtt gct gtt gat ttg att ctt ctg ttt Arg Asn Leu Asp Thr Ile Gly Val Ala Val Asp Leu Ile Leu Leu Phe	568
105 110 115	
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120 125 130	
ggc ctg cag ttt tta ggc aac att gcc tca cgg aat gaa gat tcc cag Gly Leu Gln Phe Leu Gly Asn Ile Ala Ser Arg Asn Glu Asp Ser Gln	664
135 140 145 150	
tct att gtt tgg gtg cat gct ttc cca gaa ctg ttt ttg tct tgc tta Ser Ile Val Trp Val His Ala Phe Pro Glu Leu Phe Leu Ser Cys Leu	712
155 160 165	
aat cat ccg gac aaa aaa att gtt gcc tac tct tca atg att ttg ttt Asn His Pro Asp Lys Lys Ile Val Ala Tyr Ser Ser Met Ile Leu Phe	760
170 175 180	
aca tcc ctt aat cat gaa aga atg aaa gaa ctg gag gag aac ctc aat Thr Ser Leu Asn His Glu Arg Met Lys Glu Leu Glu Asn Leu Asn	808
185 190 195	
att gca att gat gtc ata gat gct tac caa aaa cat cct gaa tca gaa Ile Ala Ile Asp Val Ile Asp Ala Tyr Gln Lys His Pro Glu Ser Glu	856
200 205 210	
tgg ccg ttc ttg att att aca gac ctc ttt ctg aaa agc ccg gaa ttg Trp Pro Phe Leu Ile Ile Thr Asp Leu Phe Leu Lys Ser Pro Glu Leu	904
215 220 225 230	
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235 240 245	
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250 255 260	
gat gac atc cct gtg ttt ttg cgg cat gct gag ttg att gca agc acc Asp Asp Ile Pro Val Phe Leu Arg His Ala Glu Leu Ile Ala Ser Thr	1048
265 270 275	
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280 285 290	

cct gat gat gag gag gca ctg gct aca att agg ctt ctc gac gtc ctg Pro Asp Asp Glu Glu Ala Leu Ala Thr Ile Arg Leu Leu Asp Val Leu 295 300 305 310	1144
tgc gaa atg act gtg aat act gag ctg ctc ggc tat ctg cag gtt ttc Cys Glu Met Thr Val Asn Thr Glu Leu Leu Gly Tyr Leu Gln Val Phe 315 320 325	1192
cct ggc ttg ctg gaa aga gtg att gat ctt ttg cgg gtg att cat gta Pro Gly Leu Leu Glu Arg Val Ile Asp Leu Leu Arg Val Ile His Val 330 335 340	1240
gct gga aaa gaa acc aca aac atc ttc agt aat tgt ggt tgc gtg aga Ala Gly Lys Glu Thr Thr Asn Ile Phe Ser Asn Cys Gly Cys Val Arg 345 350 355	1288
gca gaa ggt gac atc tcc aat gtg gcc aat ggg ttt aag tct cat ctc Ala Glu Gly Asp Ile Ser Asn Val Ala Asn Gly Phe Lys Ser His Leu 360 365 370	1336
att cgt ctg att gga aat ctg tgt tac aag aat aaa gat aac caa gac Ile Arg Leu Ile Gly Asn Leu Cys Tyr Lys Asn Lys Asp Asn Gln Asp 375 380 385 390	1384
aag gta aat gag ctg gat ggt atc ccg ttg atc ctg gac aac tgc aac Lys Val Asn Glu Leu Asp Gly Ile Pro Leu Ile Leu Asp Asn Cys Asn 395 400 405	1432
atc agt gac agt aac ccc ttt ctg acc cag tgg gtg ata tat gcc atc Ile Ser Asp Ser Asn Pro Phe Leu Thr Gln Trp Val Ile Tyr Ala Ile 410 415 420	1480
cga aac ctt acc gaa gac aac agc caa aac caa gat ttg att gca aag Arg Asn Leu Thr Glu Asp Asn Ser Gln Asn Gln Asp Leu Ile Ala Lys 425 430 435	1528
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gac acc cct aag cca tga atgaac tacatccaaa tacctgaatt tttggaatct Asp Thr Pro Lys Pro *475	1678
gtttcatgga tttttcatct tctaccgtat gtgaaattgc aagtgtttga agatttataa gtacaaattt gggAACATAC aaatTTTTA ggtAGTAGAG ttAAACGTGT ataAGCTAAA agtGAAAGTA actGAGTGTt ctctgtttc ttGcATTAA tgtaACTGTG tggTTTGCCT ttGCCCCCT ggATAGAACG tgCATTTAAA gaATATATTG tactTACTGT gACAGCAGAT aATAAACCAG tCTCTTGGAG ggcACACCC ttATTTGACA aaaaaaaaaa a	1738 1798 1858 1918 1969

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gag cgc ttc tcg cca aga tgt ggc ttc tgc aac cag ccc atc cga cac Glu Arg Phe Ser Pro Arg Cys Gly Phe Cys Asn Gln Pro Ile Arg His 285 290 295	917
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gag ggc cgc ccc tac tgc cgc cgg gac ttc ctg cag ctg ttc gcc ccg Glu Gly Arg Pro Tyr Cys Arg Arg Asp Phe Leu Gln Leu Phe Ala Pro 330 335 340	1061
cgc tgc cag ggc tgc cag ggc ccc atc ctg gat aac tac atc tcg cgc Arg Cys Gln Gly Cys Gln Gly Pro Ile Leu Asp Asn Tyr Ile Ser Ala 345 350 355 360	1109
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gcg ccc ttc tcg gga ggc agc ttt ttc gag cac gag ggc cgc ccg ttg Ala Pro Phe Ser Gly Gly Ser Phe Phe Glu His Glu Gly Arg Pro Leu 380 385 390	1205
tgc gag aac cac ttc cac gca cga cgc ggc tcg ctg tgc gcc acg tgt Cys Glu Asn His Phe His Ala Arg Arg Gly Ser Leu Cys Ala Thr Cys 395 400 405	1253
ggc ctc cct gtg acc ggc cgc tgc gtg tcg gcc ctg ggt cgc cgc ttc Gly Leu Pro Val Thr Gly Arg Cys Val Ser Ala Leu Gly Arg Arg Phe 410 415 420	1301
cac ccg gac cac ttc aca tgc acc ttc tgc ctg cgc ccg ctc acc aag His Pro Asp His Phe Thr Cys Thr Phe Cys Leu Arg Pro Leu Thr Lys 425 430 435 440	1349
ggg tcc ttc cag gag cgc gcc ggc aag ccc tac tgc cag ccc tgc ttc Gly Ser Phe Gln Glu Arg Ala Gly Lys Pro Tyr Cys Gln Pro Cys Phe 445 450 455	1397
ctg aag ctc ttc ggc tga cagcccc gctcggtcg ccgtctcccc cggaggccgc Leu Lys Leu Phe Gly *	1451
460	

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cttgcaattc	cagcgaatcg	gaggccaggc	caggacgtcc	ttgctccctg	caccctcact	1751
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	Met	Glu	Met	Pro	Arg	Lys	Pro	Arg	Leu	Thr	Leu	Phe	Val	Gln		
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Arg	Arg	Ile	Glu	Asn	Ile	Ala	Thr	Glu	Arg	Glu	Phe	Asp	Pro	Glu	Glu	
15				20				25						30		
ttt	tac	tac	cta	ttg	gaa	gca	gca	gaa	ggc	cat	gcc	aaa	gaa	gga	cag	324
Phe	Tyr	Tyr	Leu	Leu	Glu	Ala	Ala	Glu	Gly	His	Ala	Lys	Glu	Gly	Gln	
	35				40					45						
ggt	att	aaa	acc	gac	att	ccc	agg	tac	atc	att	agc	caa	ctg	gga	ctc	372
Gly	Ile	Lys	Thr	Asp	Ile	Pro	Arg	Tyr	Ile	Ile	Ser	Gln	Leu	Gly	Leu	
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aat	aag	gat	ccc	ttg	gaa	gaa	atg	gct	cat	ttg	gga	aac	tac	gat	agt	420
Asn	Lys	Asp	Pro	Leu	Glu	Glu	Met	Ala	His	Leu	Gly	Asn	Tyr	Asp	Ser	
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Gly	Thr	Ala	Glu	Thr	Pro	Glu	Thr	Asp	Glu	Ser	Val	Ser	Ser	Ser	Asn	
	80			85					90							
gcc	tcc	ctg	aaa	ctt	cga	agg	aaa	cct	cg	gaa	agt	gat	ttt	gaa	acg	516
Ala	Ser	Leu	Lys	Leu	Arg	Arg	Lys	Pro	Arg	Glu	Ser	Asp	Phe	Glu	Thr	
	95			100				105		110						
att	aaa	ttt	att	agc	aat	gga	gcc	tat	ggg	gca	gtc	tac	ttt	gtt	cgg	564
Ile	Lys	Leu	Ile	Ser	Asn	Gly	Ala	Tyr	Gly	Ala	Val	Tyr	Phe	Val	Arg	
	115			120					125							
cat	aaa	gaa	tcc	cgg	cag	agg	ttt	gcc	atg	aag	att	aat	aaa	cag	612	

His Lys Glu Ser Arg Gln Arg Phe Ala Met Lys Lys Ile Asn Lys Gln			
130	135	140	
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Asn Leu Ile Leu Arg Asn Gln Ile Gln Gln Ala Phe Val Glu Arg Asp			
145	150	155	
atc ctg act ttt gca gaa aac ccc ttt gtt gtc agc atg tat tgc tcc			708
Ile Leu Thr Phe Ala Glu Asn Pro Phe Val Val Ser Met Tyr Cys Ser			
160	165	170	
ttt gaa aca agg cgc cac ttg tgc atg gtc atg gaa tat gtg gaa ggg			756
Phe Glu Thr Arg Arg His Leu Cys Met Val Met Glu Tyr Val Glu Gly			
175	180	185	190
gga gac tgt gct act tta atg aaa aac atg ggt cct ctc cct gtt gat			804
Gly Asp Cys Ala Thr Leu Met Lys Asn Met Gly Pro Leu Pro Val Asp			
195	200	205	
atg gcc aga atg tac ttt gct gag acg gtc ttg gcc ttg gaa tat tta			852
Met Ala Arg Met Tyr Phe Ala Glu Thr Val Leu Ala Leu Glu Tyr Leu			
210	215	220	
cat aat tat gga att gta cac agg gat ttg aaa cca gac aac ttg ttg			900
His Asn Tyr Gly Ile Val His Arg Asp Leu Lys Pro Asp Asn Leu Leu			
225	230	235	
gtt acc tcc atg ggg cac ata aag ctg aca gat ttt gga tta tct aag			948
Val Thr Ser Met Gly His Ile Lys Leu Thr Asp Phe Gly Leu Ser Lys			
240	245	250	
gtg gga cta atg agc atg act acc aac ctt tac gag ggt cat att gag			996
Val Gly Leu Met Ser Met Thr Thr Asn Leu Tyr Glu Gly His Ile Glu			
255	260	265	270
aag gat gct aga gag ttc ctg gat aaa cag gtc tgt ggc aca cct gaa			1044
Lys Asp Ala Arg Glu Phe Leu Asp Lys Gln Val Cys Gly Thr Pro Glu			
275	280	285	
tac att gca cca gaa gtg att ctg agg cag ggt tat gga aag ccg gtg			1092
Tyr Ile Ala Pro Glu Val Ile Leu Arg Gln Gly Tyr Gly Lys Pro Val			
290	295	300	
gac tgg tgg gcc atg ggg att atc ctc tat gaa ttt ctg gtt gga tgc			1140
Asp Trp Trp Ala Met Gly Ile Ile Leu Tyr Glu Phe Leu Val Gly Cys			
305	310	315	
gtg cca ttc ttt ggg gat act cca gag gag cta ttt gga caa gtc atc			1188
Val Pro Phe Gly Asp Thr Pro Glu Glu Leu Phe Gly Gln Val Ile			
320	325	330	
agt gat gag atc aac tgg cct gag aag gat gag gca ccc cca cct gat			1236
Ser Asp Glu Ile Asn Trp Pro Glu Lys Asp Glu Ala Pro Pro Pro Asp			
335	340	345	350
gcc cag gat ctg att acc tta ctc ctc agg cag aat ccc ctg gag agg			1284
Ala Gln Asp Leu Ile Thr Leu Leu Arg Gln Asn Pro Leu Glu Arg			
355	360	365	
ctg gga aca ggt ggt gca tat gaa gtc aaa cag cat cga ttc ttc cgt			1332
Leu Gly Thr Gly Gly Ala Tyr Glu Val Lys Gln His Arg Phe Phe Arg			
370	375	380	
tct tta gac tgg aac agt ttg ctg aqa cag aag gca gaa ttt att ccc			1380

Ser Leu Asp Trp Asn Ser Leu Leu Arg Gln Lys Ala Glu Phe Ile Pro			
385	390	395	
caa ctg gaa tct gag gat gac aca agt tat ttt gat act cgg tct gag		1428	
Gln Leu Glu Ser Glu Asp Asp Thr Ser Tyr Phe Asp Thr Arg Ser Glu			
400	405	410	
aag tat cat cat atg gaa acg gag gaa gaa gat gac aca aat gat gaa		1476	
Lys Tyr His His Met Glu Thr Glu Glu Asp Asp Thr Asn Asp Glu			
415	420	425	430
gac ttt aat gtg gaa ata agg cag ttt tct tca tgt tca cac agg ttt		1524	
Asp Phe Asn Val Glu Ile Arg Gln Phe Ser Ser Cys Ser His Arg Phe			
435	440	445	
tca aaa gtt ttc agc agt ata gat cga atc act cag aat tca gca gaa		1572	
Ser Lys Val Phe Ser Ser Ile Asp Arg Ile Thr Gln Asn Ser Ala Glu			
450	455	460	
gag aag gaa gac tct gtg gac aaa acc aaa agc acc acc ttg cca tcc		1620	
Glu Lys Glu Asp Ser Val Asp Lys Thr Lys Ser Thr Thr Leu Pro Ser			
465	470	475	
aca gaa aca ctg agc tgg agt tca gaa tat tct gaa atg caa cag cta		1668	
Thr Glu Thr Leu Ser Trp Ser Ser Glu Tyr Ser Glu Met Gln Gln Leu			
480	485	490	
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Ser Thr Ser Asn Ser Asp Thr Glu Ser Asn Arg His Lys Leu Ser			
495	500	505	510
tct ggc cta ctt ccc aaa ctg gct att tca aca gag gga gag caa gat		1764	
Ser Gly Leu Leu Pro Lys Leu Ala Ile Ser Thr Glu Gly Glu Gln Asp			
515	520	525	
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Glu Ala Ala Ser Cys Pro Gly Asp Pro His Glu Glu Pro Gly Lys Pro			
530	535	540	
gcc ctt cct cct gaa gag tgt gcc cag gag gag cct gag gtc acc acc		1860	
Ala Leu Pro Pro Glu Glu Cys Ala Gln Glu Glu Pro Glu Val Thr Thr			
545	550	555	
cca gcc agc acc atc agc agc tcc acc ctg tca gtt ggc agt ttt tca		1908	
Pro Ala Ser Thr Ile Ser Ser Thr Leu Ser Val Gly Ser Phe Ser			
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Glu His Leu Asp Gln Ile Asn Gly Arg Ser Glu Cys Val Asp Ser Thr			
575	580	585	590
gat aat tcc tca aag cca tcc agt gaa ccc gct tct cac atg gct cgg		2004	
Asp Asn Ser Ser Lys Pro Ser Ser Glu Pro Ala Ser His Met Ala Arg			
595	600	605	
cag cga tta gaa agc aca gaa aaa aaa aaa atc tcg ggg aaa gtc aca		2052	
Gln Arg Leu Glu Ser Thr Glu Lys Lys Ile Ser Gly Lys Val Thr			
610	615	620	
aag tcc ctc tct gcc agt gct ctt tcc ctc atg atc cca gga gat atg		2100	
Lys Ser Leu Ser Ala Ser Ala Leu Ser Leu Met Ile Pro Gly Asp Met			
625	630	635	
ttt gct gtt tcc cct ctg gga agt cca atg tct ccc cat tcc ctg tcc		2148	

Phe Ala Val Ser Pro Leu Gly Ser Pro Met Ser Pro His Ser Leu Ser		
640	645	650
tcg gac cct tct tca cga gat tcc tct ccc agc cga gat tcc tca		2196
Ser Asp Pro Ser Ser Ser Arg Asp Ser Ser Pro Ser Arg Asp Ser Ser		
655	660	665
670		
gca gct tct gcc agt cca cat cag ccg att gtg atc cac agt tcg ggg		2244
Ala Ala Ser Ala Ser Pro His Gln Pro Ile Val Ile His Ser Ser Gly		
675	680	685
aag aac tac ggc ttt acc atc cga gcc atc cgg gtg tat gtg gga gac		2292
Lys Asn Tyr Gly Phe Thr Ile Arg Ala Ile Arg Val Tyr Val Gly Asp		
690	695	700
agt gac atc tat aca gtg cac cat atc gtc tgg aat gta gaa gaa gga		2340
Ser Asp Ile Tyr Thr Val His His Ile Val Trp Asn Val Glu Glu Gly		
705	,	710
715		
agt ccg gca tgc cag gca gga ctg aag gct gga gat ctt atc act cac		2388
Ser Pro Ala Cys Gln Ala Gly Leu Lys Ala Gly Asp Leu Ile Thr His		
720	725	730
atc aat gga gaa cca gtg cat gga ctt gtc cac aca gaa gtt ata gaa		2436
Ile Asn Gly Glu Pro Val His Gly Leu Val His Thr Glu Val Ile Glu		
735	740	745
750		
ctc cta ctg aag agt ggg aat aag gtg tca atc act act acc cca ttt		2484
Leu Leu Leu Lys Ser Gly Asn Lys Val Ser Ile Thr Thr Pro Phe		
755	760	765
gaa aac aca tca atc aaa act gga cca gcc agg aga aac agc tat aag		2532
Glu Asn Thr Ser Ile Lys Thr Gly Pro Ala Arg Arg Asn Ser Tyr Lys		
770	775	780
agc cgg atg gtg agg cgg agc aag aaa tcc aag aag aaa gaa agt ctc		2580
Ser Arg Met Val Arg Arg Ser Lys Lys Ser Lys Lys Lys Glu Ser Leu		
785	790	795
gaa agg agg aga tct ctt ttc aaa aag cta gcc aag cag cct tct cct		2628
Glu Arg Arg Arg Ser Leu Phe Lys Lys Leu Ala Lys Gln Pro Ser Pro		
800	805	810
tta ctc cac acc agc cga agt ttc tcc tgc ttg aac aga tcc ctg tca		2676
Leu Leu His Thr Ser Arg Ser Phe Ser Cys Leu Asn Arg Ser Leu Ser		
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830		
tcg ggt gag agc ctc cca ggt tcc ccc act cat agc ttg tct ccc cgg		2724
Ser Gly Glu Ser Leu Pro Gly Ser Pro Thr His Ser Leu Ser Pro Arg		
835	840	845
tct cca aca cca agc tac cgc tcc acc cct gac ttc cca tct ggt act		2772
Ser Pro Thr Pro Ser Tyr Arg Ser Thr Pro Asp Phe Pro Ser Gly Thr		
850	855	860
aat tcc tcc cag agc agc tcc cct agt tct agt gcc ccc aat tcc cca		2820
Asn Ser Ser Gln Ser Ser Pro Ser Ser Ala Pro Asn Ser Pro		
865	870	875
gca ggg tcc ggg cac atc cgg ccc agc act ctc cac ggt ctt gca ccc		2868
Ala Gly Ser Gly His Ile Arg Pro Ser Thr Leu His Gly Leu Ala Pro		
880	885	890
aaa ctc ggc ggg cag cgg tac cgg tcc gga agg cga aag tcc gcc ggc		2916